AD-A104 109   JOHNS HOPKINS UNIV LAUREL MD APPLIED PHYSICS LAB   F/G 8/14

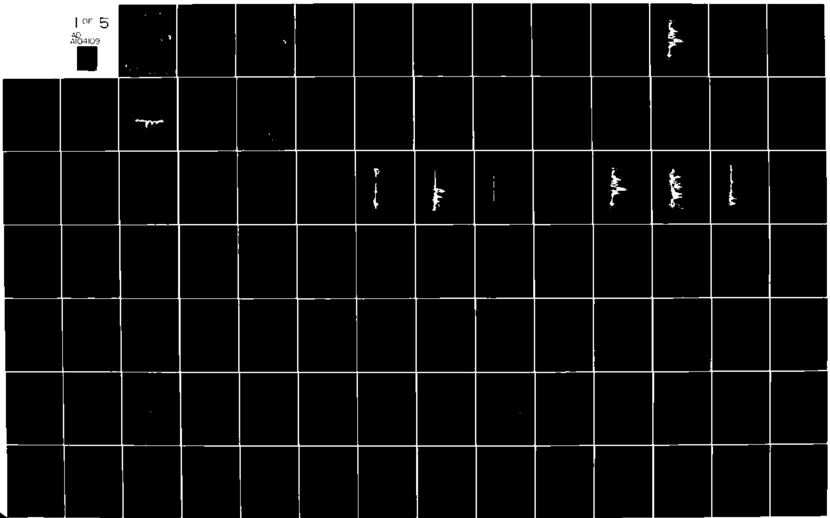
MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (--ETC(U)

DEC 80 C MENG   MIPR-FY71218000009

UNCLASSIFIED   AFGL-TR-81-0104   NL

1 OF 5

AD
A104109



LEVEL II

12

AFGL-TR-81-0104

AD A104109

MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (1979) OF THE SCATHA (P78-2) SATELLITE OPERATION

Ching-I. Meng

Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810

Final Report
1 October 1979 - 30 September 1980

December 1980

Approved for public release; distribution unlimited.

AIR FORCE GEOPHYSICS LABORATORY
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
HANSCOM AFB, MASSACHUSETTS 01731

81 9 11 049

Qualified requestors may obtain additional copies from the Defense Technical Information Center. All others should apply to the National Technical Information Service.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFGL-TR-81-0104	2. GOVT ACCESSION NO. AD-A104 109	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Magnetospheric and Geomagnetic Activity during the First Year (1979) of the SCATHA (P78-2) Satellite Operation.		5. TYPE OF REPORT & PERIOD COVERED Final 10/1/79-9/30/80
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Ching-I. Meng		8. CONTRACT OR GRANT NUMBER(s) MIPR FY71218000009
9. PERFORMING ORGANIZATION NAME AND ADDRESS Applied Physics Laboratory The Johns Hopkins University Laurel, Maryland 20810		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 62101F 766106AK
11. CONTROLLING OFFICE NAME AND ADDRESS Air Force Geophysics Laboratory Hanscom AFB, Mass. 01731 Monitor/Arthur Wendel, Lt./PHK		12. REPORT DATE December 1980
		13. NUMBER OF PAGES 395
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

DTIC ELECTE SEP 1 1 1981 H

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Auroral Electrojet Activity, Geomagnetic disturbance, Magnetosphere, Magnetospheric substorm, SCATHA satellite.

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report consists of two parts. The first is a comprehensive analysis of the geomagnetic field variations observed by several networks of ground-based stations to monitor the magnetospheric conditions during the first year of the SCATHA satellite operation in 1979, together with the determination of the most disturbed and quietest days during the 1979 period. The second part is a summary of the scientific results in the investigation of polar region electron precipitations based on USAF DMSP observations. The daily graphs and listing of 1.0 minute auroral electrojet activity index (AE) constructed from three networks of

DD FORM 1 JAN 73 1473

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

the magnetic field observatries over the Northern American Continent are illustrated as Appendices 2 and 3, respectively.

I. INTRODUCTION

The main task of the program MIPR No. FY71218000009 is to collect and analyze the ground-based and satellite data for the purpose of determining the state of the terrestrial magnetosphere and the magnitude of the magnetospheric activity which are essential for various projects in the USAF/NASA SCATHA satellite program. The effort of investigating the particle precipitations over polar regions at The Johns Hopkins University Applied Physics Laboratory is also supported under this MIPR arrangement by the AFGL, Ionospheric Dynamics Branch. Thus, this report consists of two parts corresponding to these tasks. The first is a comprehensive analysis of the geomagnetic field variations observed by several networks of ground-based stations to monitor the magnetospheric conditions during the first year of the SCATHA satellite operation in 1979, together with the determination of the most disturbed and quiestest days in each month during the 1979 period. The second part is a summary of the scientific results in the investigation of polar region electron precipitations based on USAF DMSP observations.

In the previous report (AFGL-TR-80-0070), it has been discussed in great detail that "why and how" the ground based geomagnetic field variations can be used to monitor the earth's magnetospheric conditions. An index, denoted by AE, can be used as a measure of the global auroral electrojet activity. The AE index with one-minute resolution is derived and presented in this report for the first year of SCATHA satellite operation in 1979. The meaning and derivation of AE index are introduced in the following.

II. GROUND BASED OBSERVATION OF GEOMAGNETIC FIELD VARIATIONS

Interpretation of records taken at the ground-based magnetic observatories requires organization and careful analysis of the raw records, which, for most purposes, are not readily amenable to simple numerical treatments. The AE index developed by Davis and Sugiura (1966) presents a means of organizing magnetic data obtained at a network of observatories in the auroral zone. The method is adapted to digital records and modern computer techniques. Although it may not be possible to bring out all the properties of polar magnetic disturbances, it does reveal some of their important features more clearly and readily than other methods commonly used in the past.

We first describe the polar region magnetic field disturbance in a symbolic manner to make clear the interpretation of the AE index. The polar disturbance, represented here by Dp, varies with universal time, denoted by

T, and is considered to consist of three parts:

$$Dp(T) = Dpo(T,\lambda) + Dz(T) + Dpi\ (T,\lambda) \qquad (1)$$

where λ is longitude with respect to the sun (i.e., local time). In this idealized model, the obliquity of the geomagnetic axis with reference to the rotational axis is ignored for the sake of simplicity, it being recognized, however, that this obliquity plays an important role in geomagnetic phenomena. It may be thought that if the inclination of the geomagnetic axis is taken into account, the variable λ should represent 'geomagnetic local time'. But geomagnetic time is a nonlinear function of real time (Chapman and Sugiura, 1956), and in the data analysis presented here the nonlinearity of geomagnetic time is not incorporated. Thus, strictly speaking, it is not correct to say that if λ is considered to be geomagnetic time, the conclusions drawn below are all valid with this substitution of the meaning of λ. However, we are mainly concerned with the universal time variation to monitor the magnetospheric activity, and hence the distinction between local time and geomagnetic time is for the most part irrelevant. In the right-hand side of Equation (1), the first term, $Dpo(T,\lambda)$, is the field due to the polar disturbance current system; the second term, $Dz(T)$, represents the uniform fields approximately parallel to the geomagnetic axis; and the third term, Dpi, includes irregular fields. Dz is the sum of the magnetic fields from the ring current in the magnetosphere, the current on the magnetosphere boundary surface, the current in the magnetotail, and if there is any, a zonal current flowing in the polar ionosphere. Because of the distortion of the magnetosphere, the ring current field will not be exactly axially symmetric, but to a first approximation it may be considered to be so. The field from the magnetospheric boundary current is, of course, not axially symmetric, but, according to Mead (1964), the lowest term of the spherical harmonic expansion of this field, which represents a uniform field, gives a good approximation near the earth. The field from the neutral sheet current in the magnetotail may be taken to be uniform in the vicinity of the earth; according to Ness (1965), the orientation of the normal to the neutral sheet depends on the direction of the geomagnetic axis relative to the earth-sun line; for simplicity this field is included in Dz.

The term $Dp(T,\lambda)$ differs from DS defined by Chapman (1953) and Sugiura and Chapman (1960) in the following respect. The latter, i.e., $DS(T,\lambda)$,

is defined as the deviation of the total disturbance field D from axial symmetry; the axially symmetric part is designated Dst. This method of analysis is useful in low to moderate latitudes because of the particular circumstance that the ring current field, which is the main contributor to the disturbance there, is roughly axially symmetric. In the auroral zone, the division of D into DS and Dst does not entail a division of the disturbance into two entities associated with different physical mechanisms. If there is any axial asymmetry in the disturbance field arising from a single physical mechanism, the field is decomposed into an axially symmetric (Dst) and an axially asymmetric (DS) part. This point was, of course, realized in defining Dst and Ds. It has become a custom to refer to the polar disturbance current system as the DS (or SD) current system even though the integral of the current over each latitude circle is not zero. However, as long as the original meaning of each symbol is correctly understood there does not seem to be any harm in using various symbols, DS, SD, Dst, Sq, etc., in a rather loose sense; they provide convenient, simple terms to various geomagnetic variations that are otherwise difficult to name.

The component Dpo in Equation (1) can be expressed as

$$Dpo(T,\lambda) = K(T)DS^{o}(\lambda) \tag{2}$$

where K(T) is an operator with a meaning given below and where $DS^{o}(\lambda)$ is the field from the familiar polar disturbance current system, the symbol DS not being used in the rigorous sense explained above. The operator K(T) simply means that the intensity of the field varies with T, maintaining the field pattern prescribed by $DS^{o}(\lambda)$, but K(T) may alter the phase (or the orientation) of the current pattern; the latter provision was included because the orientation of the current system is quite variable. In reality, Dpo is not so simple as Equation (2) indicates; nevertheless, this simplification is merely for the sake of convenience in thinking. Thus, what is generally called the DS current system (in a loose sense) is the Dpo current system. In here, Sq is altogether ignored. The relative importance of DS, Dz, and Dpi components in determining Dp has remained an open question for some years.

III. AURORAL ELECTROJET ACTIVITY INDEX

The Auroral Electrojet (AE) index is designed to provide a global, quantitative measure of auroral zone magnetic activity produced by enhanced ionospheric currents flowing below and within the auroral oval. Ideally, it

is the total range of deviation at an instant of time from quiet day values of the horizontal magnetic field (H component of the geomagnetic field) around the auroral oval. AE index can be employed both qualitatively and quantitatively as a correlation index in the studies of magnetospheric substorm morphology, in the investigations of various satellite anomalies (i.e., the spacecraft charging phenomenon), in radio propagation and radio scintillation, and in the coupling between the interplanetary magnetic field and the terrestrial magnetosphere. For numerous uses, AE index has many advantages over other geomagnetic indices or at least shares their advantageous properties. (The comparison of AE with other frequently used geomagnetic indices will be discussed in the later section.) In particular, the AE index can be derived on an instantaneous basis or from averages of variations computed over any selected interval. It is a quantitative index which, in general, is directly related to the processes producing the observed geomagnetic variations. The AE index is well suited to present computer processing techniques because its method of derivation is relatively simple, digital, and objective; and it can be used to study either individual events or statistical aggregates. The AE index for 1979 is derived by The Johns Hopkins University Applied Physics Laboratory in response to the urgent need as voiced by the SCATHA experimenter community at various project meetings and in personal communications. This report is one means of communicating a summary of the derived indices for the first year of SCATHA satellite operation based on the currently available ground-based stations. This undertaking is for the purpose of providing the much needed informations on the magnetospheric condition in a timely fashion to the USAF/NASA SCATHA experimenters and community. Since the standard AE index, generated by the World Data Center A for Solar-Terrestrial Physics, will not be available in the near future.

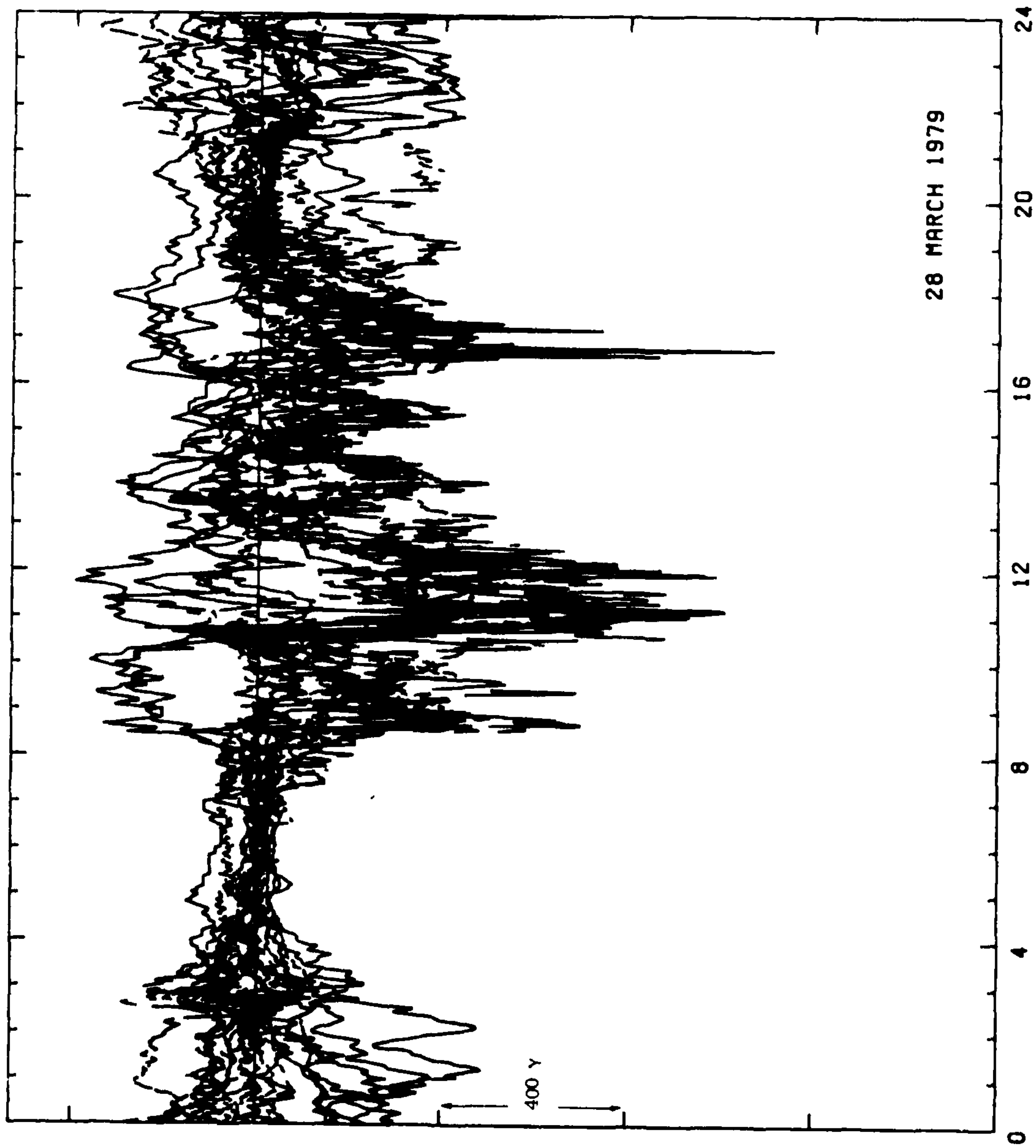
IV. DERIVATION OF AE INDEX

In practice, AE index is defined by describing a graphical technique of derivation that is still used to generate preliminary sets of indices for single events. Magnetograms for a given universal time day are collected for a group of auroral zone magnetic observatories. Instantaneous scaling of the H (or X) tracings from each station is made at 1-minute intervals. The instantaneous H (or X) scalings are referenced from base lines representing the average H (or X) value measured on quiet days occurring before and after the period analyzed. These base levels are assumed to represent to within

about 10γ (gammas) at each location the horizontal component of the geomagnetic field in the absence of disturbance ionospheric currents (i.e., no magnetospheric activity). Thus the deviations ΔH (or ΔX) from the reference level are directly related to the magnitude of the eastward or westward electrojet currents giving rise to the Dp magnetic variations at each station. Sq variations are included in the measurement, but the effects are small, probably not often exceeding 20γ.

If the distribution of stations were infinitely dense, and if a superposition were made of all the H (or X) traces arranged by UT, these traces would define upper and lower envelopes between which all curves would lie. When the number of stations is limited, as it necessarily is in practice, such envelopes are not completely defined. Nevertheless, when the H traces for the selected stations are superimposed on one another as shown in Figure 1, an upper and a lower envelope can be defined reasonably well. Two envelopes so drawn are shown. The upper and the lower envelopes are defined as AU and AL indices respectively. In essence, these envelopes are the loci of the maximum and minimum of ΔH (or ΔX) for the stations used in the analysis.

Were the station distribution perfective located, the AU and AL envelopes resulting from this procedure would represent at each epoch the maximum positive and negative H deviations occurring along the auroral zone. Since the major positive and negative geomagnetic field disturbances extend over an appreciable length of the auroral zone, they are reflected in the AE derivation from a limited station distribution. On the other hand, a limited observatory distribution will not always provide the full amplitude of the auroral electrojet intensities and may not be able to detect small localized geomagnetic disturbances unless one of the stations happened to be in the disturbance region. (The precautionary notes of using the preliminary AE index presented in this report are discussed in the latter section.) During times of major disturbances, the auroral electrojets shift equatorward of the usual auroral zone latitude and hence away from the auroral zone station distribution. A converse circumstance in which the maximum auroral electrojet current shifts poleward of the auroral oval station network occurs during the relatively inactive magnetospheric conditions when the interplanetary magnetic field is generally oriented northward. However, if a north-south chain of magnetic observatory networks is used in the derivation of AE index, no serious difficulties of such nature will take place. In general, a geomagnetic field observatory is sensitive to the occurrence of a moderate disturbance at roughly


28 MARCH 1979
400 γ
0
4
8
12
16
20
24

30° of longitude and $\sim$ 3° of latitude away from the station. Due to the conjugacy of the geomagnetic disturbances, a network of stations from only one polar region is sufficient to monitor the global (i.e., magnetospheric) disturbances.

When axially symmetric fields from distant sources are absent, the upper (AU) and lower (AL) envelopes provide a measure of the maximum eastward and westward auroral electrojet currents at any time. At a time when zonal currents exist either in the auroral ionosphere or in the magnetosphere, these currents will displace the AU and AL envelopes so that they no longer provide a direct indication of the maximum eastward and westward current densities in the auroral electrojet. However, the separation between the AU and AL envelopes depends solely upon the maximum eastward and westward electrojet currents and is independent of zonal currents, if any, existing in the ionosphere, or of the axially symmetric component of magnetic fields from any distant sources.

Thus the auroral electrojet index AE is defined by

$$AE = AU - AL \tag{3}$$

which is a direct measure of the total maximum amplitude of east and west electrojet currents. AE is an instantaneous global index of the electrojet and is a function of universal time. The changes in the fields from the surface current on the magnetospheric boundary and from the neutral sheet current in the magnetotail are ignored. AE is an index of Dp in Equation (1). An obvious advantage of AE as an index of the Dp variation is that AE results from direct measurement and has a directly interpretable meaning; specifically, AE is a direct measure of the worldwide maximum amplitude of the auroral electrojets. AE is defined as an instantaneous index, but the method can be applied to time averages.

It is important to note that inherently the plots showing the AU and AL envelopes contain more information than the AE index, since they indicate east and west current direction as well as magnitude. Stations contributing to the formation of the AU and AL envelopes at a particular time provide information on the local time of the positions of the most intense eastward and westward electrojet currents. The AU envelope is determined most frequently from the contribution of stations west of the midnight meridian

whereas stations to the east determine the AL envelope. Thus, the most intense electrojet currents at the auroral zone exist on the night side of the earth with eastward and westward currents tending to exist in the evening and morning sectors, respectively.

V. RELATIONSHIPS BETWEEN AURORAL ELECTROJET AND OTHER GEOMAGNETIC ACTIVITY INDICES

Kp index is the most commonly used index representing the geomagnetic activity. It is the mean standardized K index from twelve observatories lying in northern or southern latitudes between 48° and 63° geomagnetic latitude (Bartels et al., 1962). K indices for individual stations are determined from the largest of the maximum deviations of the three components for 3-hour intervals at that station. Then Kp is defined by a quasi-logarithmic relation to the amplitude of disturbance in order that a wide range of activity be expressed by a one-digit number; the corresponding linear amplitude index is ap, and the daily equivalent planetary amplitude Ap is the average of the 8 ap values for 1 day.

Kp and ap are measures of variation in the geomagnetic field and in principle respond only to disturbance variations (Sq and lunar variations are subtracted out in the preparation of the K indices). During periods of great magnetic activity, the auroral electrojets may move equatorward until they approach or partially overlie the higher-latitude observatories used to determine Kp. Then high Kp index values result directly from the influence of the auroral electrojets and from variation in the equatorial ring currents. Under more normal conditions, the twelve observatories used to derive Kp are equatorward of the auroral electrojets and then the middle-latitude DS currents and the ring currents are the primary contributors to the 3-hour Kp and ap indices. Both AE and DS are more variable within a 3-hour span than Dst, and, since Kp and ap are measures of variation in 3 hours, they provide indices of Dp activity primarily. It is important to point out that for the purpose of monitoring the magnetospheric substorm which has a life span usually of one to few hours, the high time resolution AE index is the only geomagnetic activity capable of providing informations to identify the occurrence of individual substorms as well as various phases of a magnetospheric substorm.

VI. OBSERVATORIES USED IN DERIVING AE

The number and distribution of geomagnetic observatories used in the derivation of AE index determine the sensitivity and the Universal-Time

temporal coverage of the derived index in monitoring the geomagnetic and magnetospheric activities. Ideally, the distribution should achieve a very dense and nearly uniform longitudinal coverage with wide (60° to 80° gm lat) range of latitudes. However, obtaining data from such a very dense spatial distribution of geomagnetic observatories is not possible in practice. In order to speed up the derivation of AE index for the SCATHA satellite operation with least time delay in gathering magnetograms from various stations, only data from three networks of geomagnetic observatories are collected and analyzed. They are: (1) the Alaskan Meridional Chain along the magnetic longitude of approximately 260° between ~ 61.8° and 89.0° geomagnetic latitude consisting of 12 stations, (2) the Canadian Fort Churchill Meridional Chain of 6 stations along the magnetic longitude of about 326° from ~ 64° to 83° geomagnetic latitude and (3) an East-West Chain with 6 stations along the auroral zone at geomagnetic latitudes of about 68° connecting the above two Alaskan and Canadian Meridional chains. Table 1 lists names and locations of these three networks. A map illustrating their geographical distribution was already included as Figures 6 and 7 in the previous technic report (AFGL-TR-80-0070).

Data from these magnetometer stations are transmitted in real-time from the ground station linked with NOAA's Space Environment Laboratory at Boulder, Colorado via the NOAA geosynchronous weather satellites. The data gaps, anomalous signals and drift of base lines are frequently encountered in this data set; thus, frequently some of the stations are deleted from the derivation of the AE index due to the irregularity in the data. In the computation of AE index, a constant quiet-time H (or X) reference level was computed for each month for each station. It is the average of all H (or X) values for the 5 International Quiet Days of that station month. The quiet-time reference values were then subtracted from the 1.0-minute H (or X) scalings of each station and the resulting H (or X)-deviation time series were compared. At each 1.0-minute data interval, the extreme positive and negative H (or X) deviations were identified and designated as AU and AL, respectively. According to their definitions, AE index is computed from AE = AU - AL. Figure 2 is an example of the daily graphs of variations of AE, AU and AL as functions of universal time. The top panel illustrates 1.0-minute AE values. The bottom panel is the superposition of the time series of H (or X) deviation from each station. The AU and AL indices are the upper and lower envelopes (i.e., the positive and negative extreme values), respectively for this set of overlapping traces. This graph of composite magnetic field variations from

TABLE 1

LOCATIONS OF MAGNETOMETER NETWORKS

I. ALASKA CHAIN

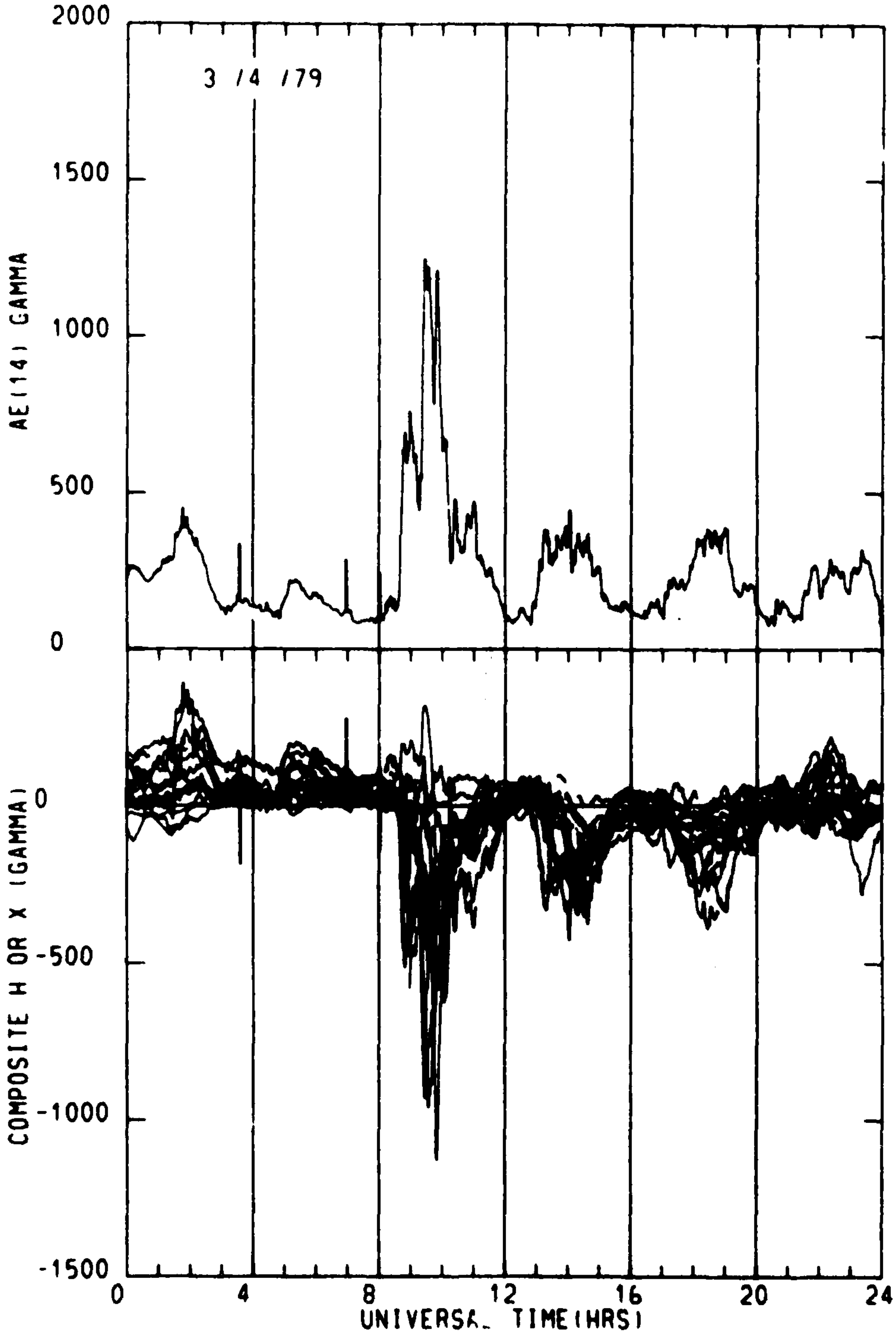
Location	Geographic Lat N	Geographic Long W	Geomagnetic Lat N	Geomagnetic Long E
Eureka	80	85.70	--	--
Isachsen	78.80	104	--	--
Johnson Point	72.46	118.30	--	--
Sachs Harbor	72	125.3	75.27	266.40
Cape Parry	70.20	124.70	--	--
Inuvik	68.25	133.30	70.58	266.40
Arctic Village	68.13	145.57	67.88	254.52
Fort Yukon	66.57	145.28	66.62	256.80
College	64.88	148.05	64.60	256.30
Talkeetna	63.30	150.10	61.88	256.95

II. FORT CHURCHILL CHAIN

Location	Geographic Lat N	Geographic Long W	Geomagnetic Lat N	Geomagnetic Long E
Resolute Bay	74.70	94.90	83.1	287.7
Pelly Bay	68.53	89.51	78.6	320.45
Baker Lake	64.33	96.03	73.9	314.8
Rankin Inlet	62.80	92.33	72.9	321.9
Eskimo Point	61.10	94.07	71.1	321.8
Fort Churchill	58.80	94.10	68.8	322.5
Back	57.69	94.23	67.8	323.0
Gillam	56.35	94.42	66.2	323.4
Island Lake	53.88	94.68	64.0	324.4

III. EAST-WEST CHAIN

Location	Geographic Lat N	Geographic Long W	Geomagnetic Lat N	Geomagnetic Long E
Norman Wells	69.90	125.50	--	--
Fort Simpson	61.75	121.23	--	--
Lynn Lake	56.85	101.06	--	--


3 /4 /79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

all stations is very useful in determining the validity of the derived AE index given in the upper panel. It can reveal the data gap, occasional data telemetry noise, possible anomalous values and also relative contributions from network stations to variations of AE index.

Daily graphs of variations of all three 1.0-minute indices (AU, AL and AE) and the daily composite geomagnetic variations from all the observatories contributed to the derivation of AE index are reproduced at the end of this report. The digital values of every 1.0-minute AE index for each day are also listed in this report. Figure 3 is an example of this daily listing. AE values of each universal time day is grouped in two frames from 00:01 UT to 12:00 UT and 12:01 UT to 24:00 UT. The value 0 represents the data gap.

VII. PRECAUTIONARY NOTES

Users of these indices should be aware of the following points that may affect the interpretation of index information contained in this report. Four potential sources of misleading or unreliable indices are:

(1) the working definition of AE used in the derivation of the indices,

(2) the character of the magnetogram records,

(3) the digitization and data manipulation processes and

(4) the limited longitudinal coverage of the network distribution.

At an AE observatory, an increased deviation from quiet-time H may be the same for either an enhanced electrojet current or for a constant current that moves closer to the fixed observatory location. Given a necessarily limited number of contributing observatories and an index based exclusively upon variations in the H component, it is not always possible to distinguish between these two alternatives. If an event is of sufficient magnitude and extent so as to be observed simultaneously at several locations or if it is of sufficient duration to be recorded by successive observatories rotating into the critical longitude sectors, then such ambiguity may be resolved.

Effects of low-amplitude electrojet variations of short duration that occur during otherwise quiet intervals when the auroral oval is contracted may be imperfectly recorded. If such small events occur over sectors between widely separated observatories, they could be missed entirely, although past experience does not suggest that this happens frequently. Also, during very

AE(14) VALUES FOR 3- 9-79

100	231	237	[illegible]	[illegible]	[illegible]	[illegible]	263	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	261	261	[illegible]
200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	277	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
300	377	376	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	117	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
600	[illegible]	167	171	173	173	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	217	216
700	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AE(14) VALUES FOR 3- 9-79

1300	102	[illegible]	93	101	97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	91	89	[illegible]	83	[illegible]
1400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1700	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

large magnetic disturbances, the auroral oval may expand equatorward below the ring of stations used to derive AE. Thus, times of low AE may not guarantee a total absence of magnetic activity over the polar cap, and during large magnetic storms, the indices are merely the lower limit of the disturbances.

At the observatories, any problem that causes the H trace to be unstable or that causes loss of the record during disturbed times must inevitably affect the AE indices derived for such intervals. In general, periods of component drift at an observatory become relatively obvious when they reach an amplitude sufficient to obscure genuine variations recorded at other locations. Although efforts are made to salvage useful information during these intervals, sometimes the only solution has been elimination of that observatory's records until instrumental adjustments appear to have corrected the problem.

A more serious problem arising from the character of the magnetograms is any time for which the H trace is effectively lost or with enhanced data noise. At such times, the number of contributing stations is reduced. When the H trace is suddenly lost at a critically located station that was supplying either AU or AL, then some other station having the next most extreme H deviation at that instant begins to take the place of the lost data source and becomes the key to the affected index. Although such intervals are not usually noticeable in the graphs of AE variations, they commonly have the effect of producing a large bay-like feature in the affected AU or AL trace. These characteristically-shaped spurious events can be best checked by inspecting the composite graph of that day at the lower panel.

Sometimes our technique of selecting a constant quiet-day H reference level for each station-month of data may produce low-amplitude month-end discontinuities in AU or AL. Also, quiet-time departures of station values from their monthly average may produce intervals having elevated AU or AL values but appearing relatively quiet. Such index discontinuities and intervals of higher noise level are considered relatively insignificant compared to the amplitude of substorm effects to be seen in the indices.

<u>The most serious warning</u> to users of the preliminary AE index in this report is that the geomagnetic observatory network used in deriving these AE indices is distributed over American Continent from Eastern Canada to Alaska covering only $\sim$ 1/3 of the earth in longitude. The AE index shown in this

report can provide effective geomagnetic activity monitoring for less than 3/4 of a universal-time day. The blind spot of the above mentioned networks in determining the geomagnetic activity is from about 20 UT to 04 UT when Europe is in the midnight sector. In order to expand the longitudinal (i.e, the universal-time) coverage, we are in the process of collecting magnetograms from key European geomagnetic observatories. Thus, users of the AE index given by this report should be discriminative in their interpretation. Please contact the author before using these AE values in your publications.

VIII. Dst, Kp AND SPECIAL DAYS IN 1979

Magnetograms from the magnetometer networks and individual observatories provide us with information for determining the occurrence and development of each magnetospheric substorm. However, these data are not suitable to be used in scanning the general magnetospheric conditions on a daily basis. For this purpose, the 3-hour geomagnetic planetary index Kp and the hourly storm-time variation index Dst are collected. The Kp index is a general measure intended to express the degree of geomagnetic activity over the whole earth. For this purpose, local geomagnetic activities at twelve selected observations in moderately high geomagnetic latitudes up to 63° are combined and synthesized into the Kp index at Institut fur Geophysik at Gottingen (Germany) for the IUGG; Association of Geomagnetism and Aeronomy. The Kp index ignores the composition of the disturbance field. Therefore, the interpretation of Kp is not always straightforward, but the high Kp values are mainly due to the field of polar magnetic disturbances. The storm-time variation (Dst) inoex is derived from the first term of Fourier analysis of the mid-latitude geomagnetic storm field. It represents the component of the disturbance field axially symmetric with respect to the earth dipole axis. The Dst field is due mainly to external sources and its vector lines are nearly parallel to the earth's surface. Studies of ground magnetic records alone cannot give the unique location of the electric current systems responsible for the Dst disturbance. In the past it was often tacitly assumed that in low latitudes the Dst field is produced by axially symmetric ring current in the magnetosphere. Satellite *in situ* observations have now established that the variation of the Dst field is associated with the changes of the proton belt (ring current) in the inner magnetosphere. The 3-hour Kp index and the hourly Dst index are routinely obtained for the purpose of monitoring the gross magnetospheric conditions and Appendix 1 consists of these indices for the first year of the SCATHA mission.

Based on the above-mentioned data set, the special geomagnetic activity and the magnetospheric conditions during the first year of SCATHA satellite operation are selected. Table 2 lists geomagnetically quiet days of each month together with their daily sum of 8 Kp indices. The ten quietest days during this year are also selected and listed in Table 3. Table 4 gives the disturbed days of each month. The ten most disturbed days (geomagnetic storm) and their approximate intensity are given in Table 5.

In the first year of SCATHA data investigations, two periods were particularly interesting to most of the experimenters due to the high voltage spacecraft charging and the operation of electron and ion guns. They are February 11-13, 1979 and March 28-30, 1979. In order to support these special activities of SCATHA community, the comprehensive AE index was generated to provide an accurate measure of the geomagnetic and magnetospheric conditions. In addition to three American Continent magnetometer networks mentioned above, magnetograms from seven other stations were scaled; thus, the improved AE index for these two time periods is capable of monitoring geomagnetic activities at all longitudes (i.e., all universal times). Seven additional stations are: Narssarssuaq (Greenland), Leirvogur (Iceland), Kiruna (Sweden), Dixon Is. (USSR), Cape Chelyuskin (USSR), Tixie Bay (USSR) and Yellowknife (Canada). These composite plots of H (or X) deviations from all stations are illustrated in Figure 4 (February 11-13, 1979) and Figure 5 (March 28-30, 1979). The 1.0-minute values of AE index for these two periods are not given here and they are available from APL/JHU upon request.

IX. SUMMARY OF SCIENTIFIC RESULTS

The USAF Defense Meteorological Satellite Program (DMSP) provides opportunities to examine the polar region particle precipitations and the simultaneous optical auroral display with its associated electron precipitation. Several important results were obtained from studies of DMSP particle and auroral observations and are summarized here.

1. Electron Precipitations in the Midday Auroral Oval, to be Published in J. Geophys. Res.

Simultaneous observations of auroral displays and electron precipitations by the DMSP-33 satellite provide an excellent and unique opportunity to study precipitation characteristics of the midday auroral oval. The attention is given to two topics: (1) The nature of the 'gap' of the midday

TABLE 2

QUIET DAYS OF 1979

QUIET DAYS
(JAN 79 - DEC 79)

Date		ΣKp
Jan 79	10	8-
	11	9
Feb 79	1	13+
	7	13
	10	13+
	13	4+
	14	4+
	17	10-
	20	12+
Mar 79	12	11+
	14	5-
	20	13-
	21	9+
Apr 79	18	13-
	19	12-
	20	4-
May 79	3	14-
	6	12+
	16	11+
	17	6+
	31	11
June 79	1	9+
	2	12-
	3	8
	4	13-
	5	8
	18	12+
	19	13
	28	8+

Quiet Days - (Jan 79 - Dec 79)

Date		ΣKp
July 79	2	8-
	10	12-
	11	8+
	22	12
	23	12
	24	11+
	25	6
	31	4+
Aug 79	9	14
	14	15-
	15	9+
	16	11-
	17	14
	23	10
Sept 79	2	11+
	8	13
	9	10+
	22	13
Oct 79	5	11
	14	12+
	17	9
	18	5+
	19	10
	20	13+
	23	14
	27	12
	30	9+
	31	11+

Quiet Days - (Jan 79 - Dec 79)

Date		ΣKp
Nov 79	5	4+
	6	6-
	15	6+
	18	8+
	22	4+
	23	8
	26	8
	27	9-
	28	3
	29	8
Dec 79	7	8+
	10	11-
	11	10
	12	8+
	13	7
	14	9+
	20	9
	21	8-
	23	6+
	25	4

TABLE 3

THE TEN QUIETEST DAYS OF 1979

TEN QUIETEST DAYS
(JAN 1979 TO DEC 1979)

	Date	ΣKp
1	Nov 28, 1979	3
2	April 20, 1979	4-
3	Dec 25, 1979	4
4	Feb 13, 1979	4+
5	Nov 5, 1979	4+
6	Nov 22, 1979	4+
7	Feb 14, 1979	4+
8	July 31, 1979	4+
9	March 14, 1979	5-
10	Oct 18, 1979	5+

TABLE 4

DISTURBED DAYS OF 1979

DISTURBED DAYS
(JAN 79 TO DEC 79)

Date		ΣKp	Max Dst(γ)	UT	
Jan 79	4	39-	-91	24	
	7	28+	-94	21	
	23	30	-70	24	(Max -79, at 01 UT on Jan 24)
	25	34-	-58	12	
	26	31+	-48	21	
			-48	22	
Feb 79	21	41	-98	22	(also -90 at 09 UT)
	22	34	-90	1	(also -81 at 09 UT)
	23	33	-50	23	
	26	29-	-72	24	
	27	28	-66	3	
Mar 79	6	33	-71	15	
	10	40	-129	24	
	22	31	-74	17	
	28	36-	-49	24	
	29	45-	-121	22	
Apr 79	4	34+	-197	4	
	5	38+	-57	1	(not a maximum)
	22	39-	-86	4	
	25	54-	-142	13	(also -109 at 07 UT and -108 at 09 UT)
	29	39+	-63	21	
May 79	19	30-	-29	11	
	22	35	-60	11	
	24	31+	-40	2	
	25	35-	-41	20	
	26	30+	-40	2	

Disturbed Days - January 1979 to December 1979)

Date		ΣKp	Max Dst(γ)	UT	
June 79	6	25+	+11	16	
	7	30	-38	7	
	22	29-	-46	22	
July 79	6	25-	-4	16	
	7	30-	-31	16	
	27	27+	-82	3	
	29	29	-4	19	
Aug 79	13	41-	-73	22	(also -63 at 14 UT)
	19	34+	-46	3	(also -46 at 11 UT)
	20	33+	-46	24	(Max - 52γ at 01 UT on Aug 21) (also -38 at 20 UT and -20 at 04 UT)
	21	28	-55	3	(also -52 at 01 UT)
	29	45-	-150	18	(also -140 at 22 UT)
Sept 79	18	42-	-156	16	(also -139 at 12 UT and -66 at 03 UT)
	20	26	-61	17	
	21	27	-49	9	
Oct 79	6	33	-46	14	(also -45 at 22 UT and -27 at 06 UT)
	7	34	-55	7	(also -70 at 02 UT on Oct 8)
	8	36	-79	11	(also -70 at 02 UT)
	9	29	-68	3	(also -68 at 06 UT)
Nov 79	13	35+	-90	17	
	24	30	-50	13	
Dec 79	29	34-	-42	19	(also -41 at 08 UT)
	30	27+	-38	5	(also -38 at 08 UT)

TABLE 5

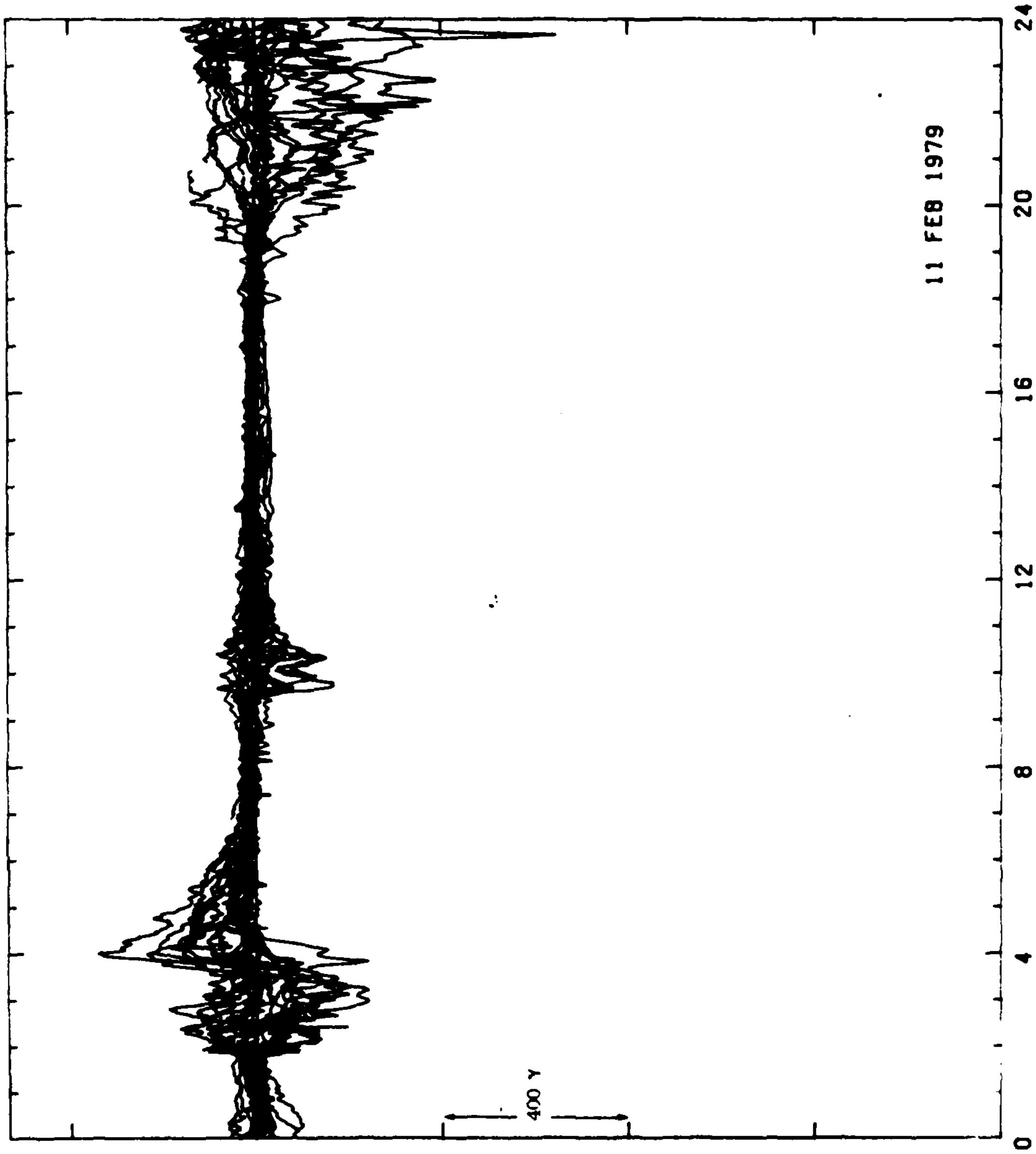
THE TEN MOST DISTURBED DAYS OF 1979

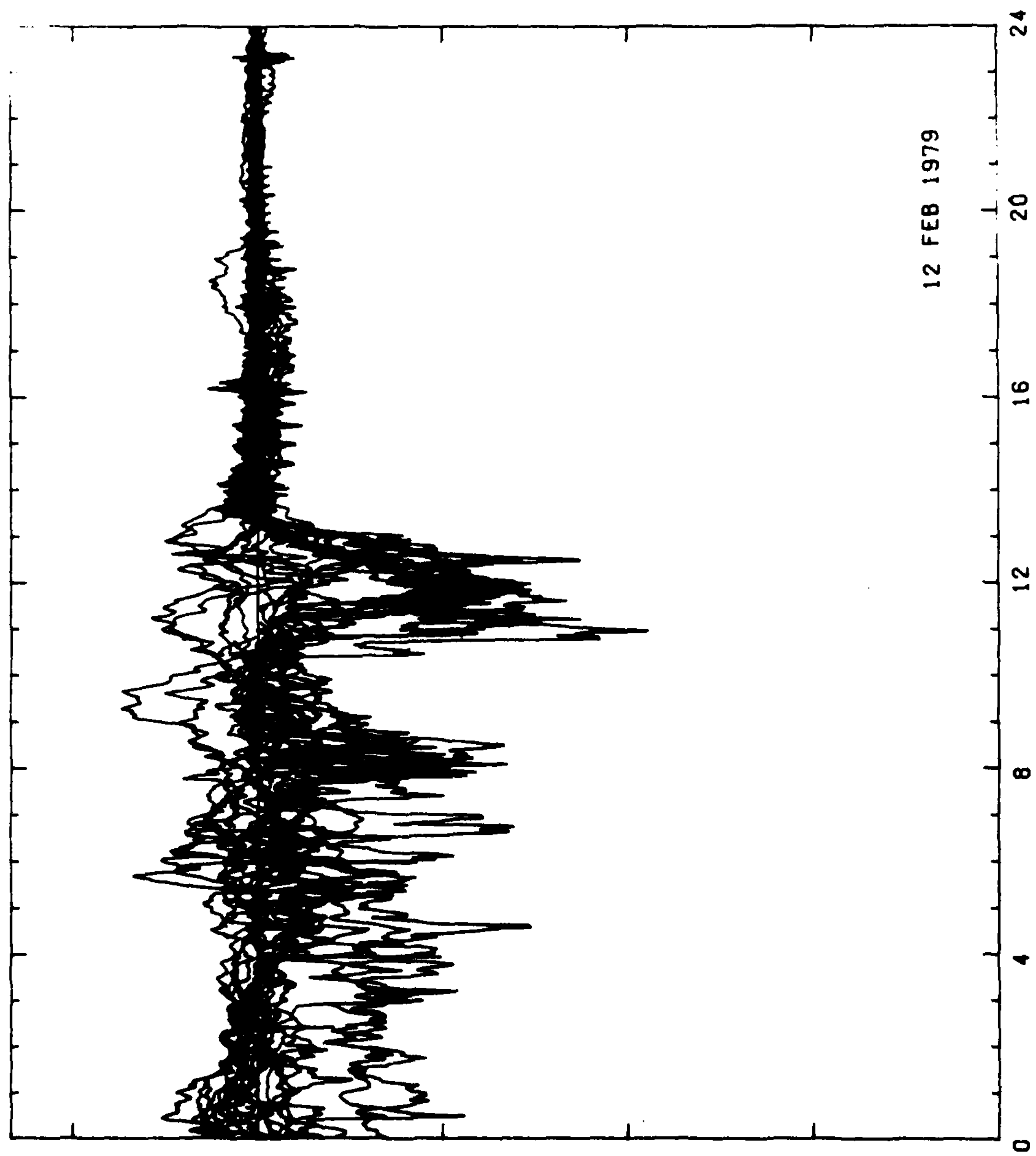
TEN MOST DISTURBED DAYS DURING JANUARY 1979 TO DECEMBER 1979

	Date	ΣKp	Max Dst(γ)	UT	
1	April 25, 1979	54-	-142	13	(also -109 at 7 UT and -108 at 9 UT)
2	March 29, 1979	45-	-122	22	
3	August 29, 1979	45-	-152	18	(also -140 at 22 UT)
4	Sept. 18, 1979	42-	-156	16	(also -139 at 12 UT and -66 at 3 UT)
5	Feb. 21, 1979	41	- 98	22	
6	Aug. 13, 1979	41-	- 73	22	(also -63 at 14)
7	March 10, 1979	40	-129	24	
8	April 29, 1979	39+	- 63	21	
9	April 4-5, 1979	34+,38+	-197	24	
10	April 22, 1979	39-	- 86	4	

FIGURE 4

AE INDEX FOR FEBRUARY 11-13, 1979


11 FEB 1979
400 γ
0
4
8
12
16
20
24


12 FEB 1979
0
4
8
12
16
20
24

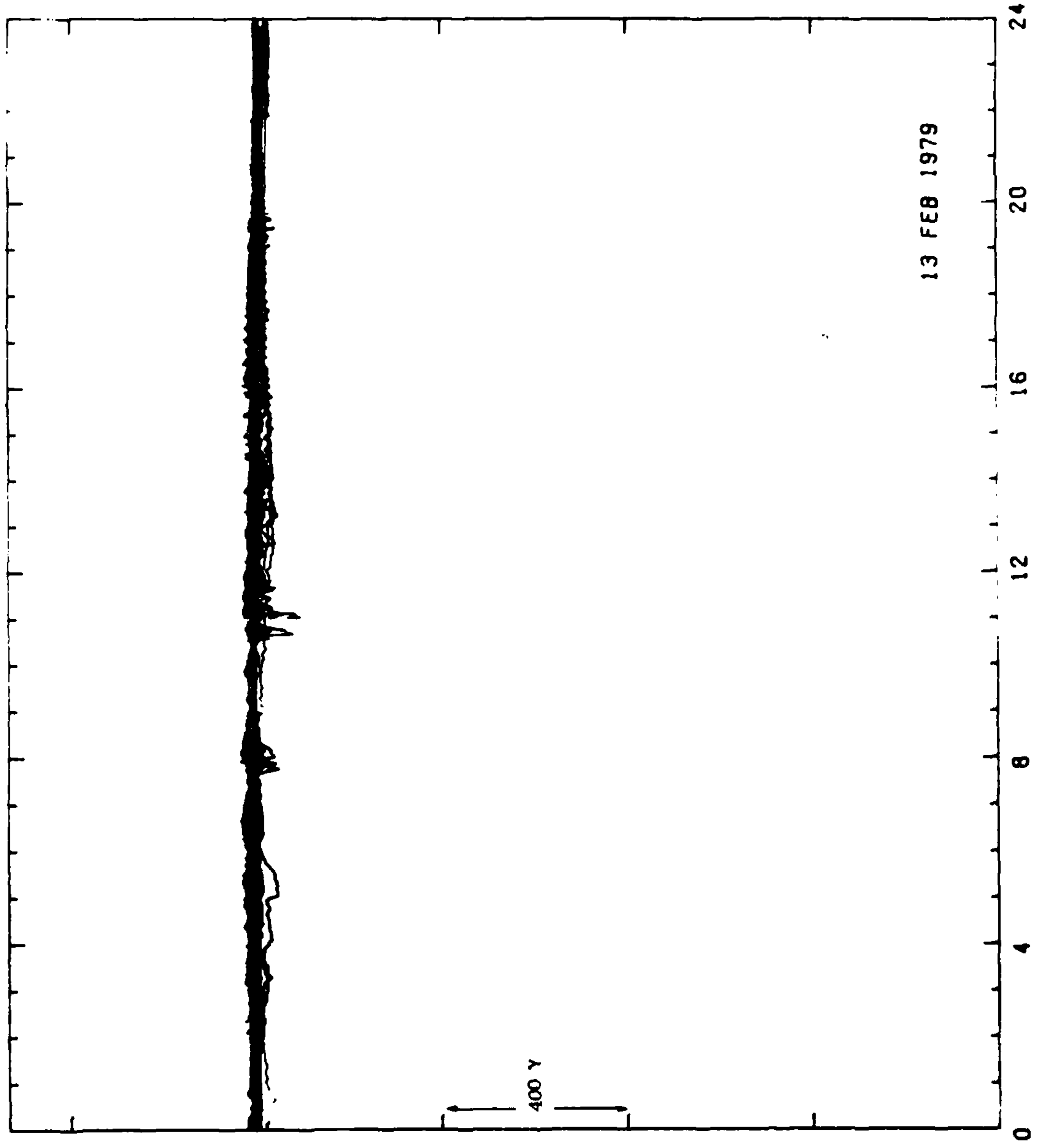
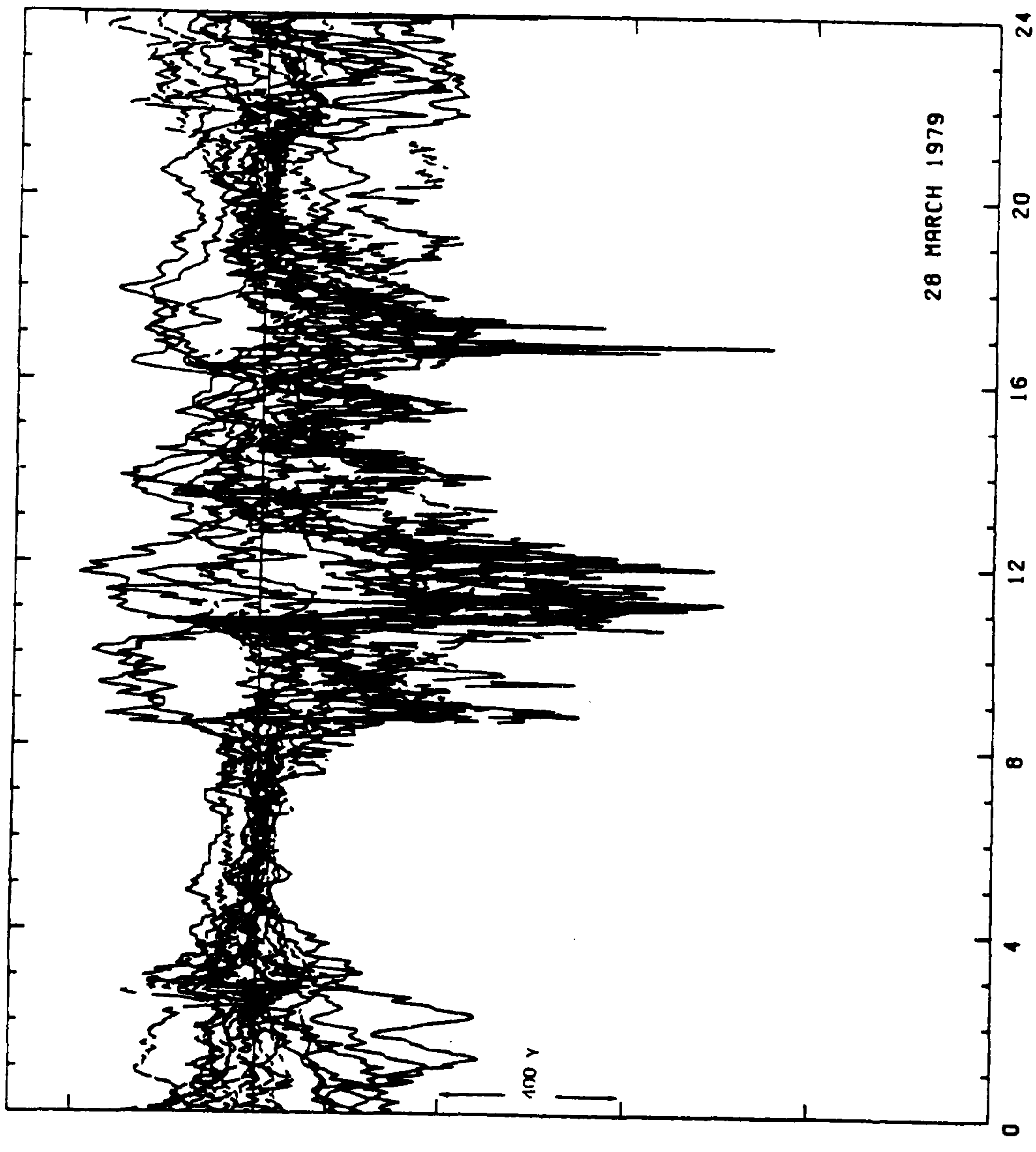
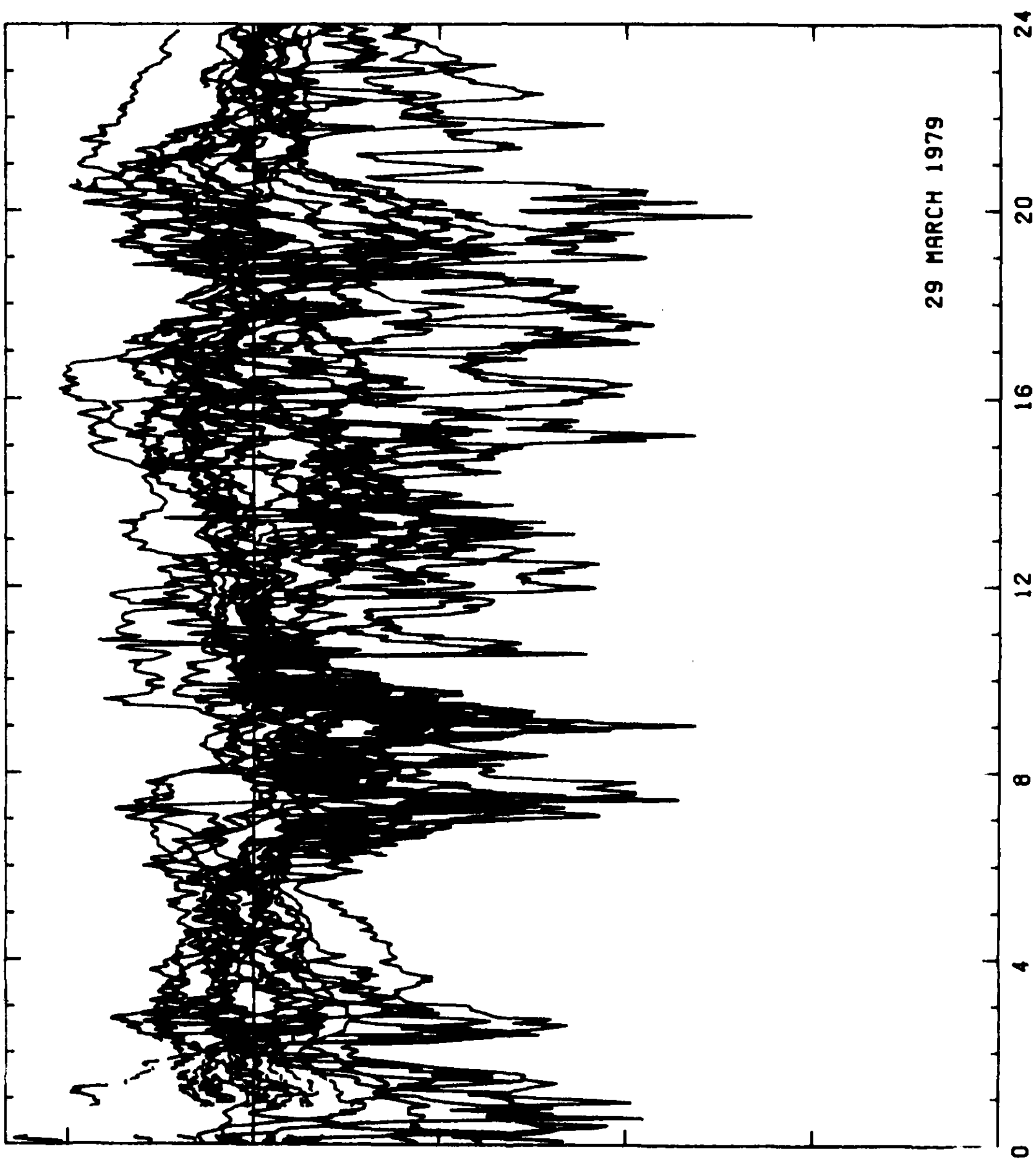

13 FEB 1979
400 γ
0
4
8
12
16
20
24

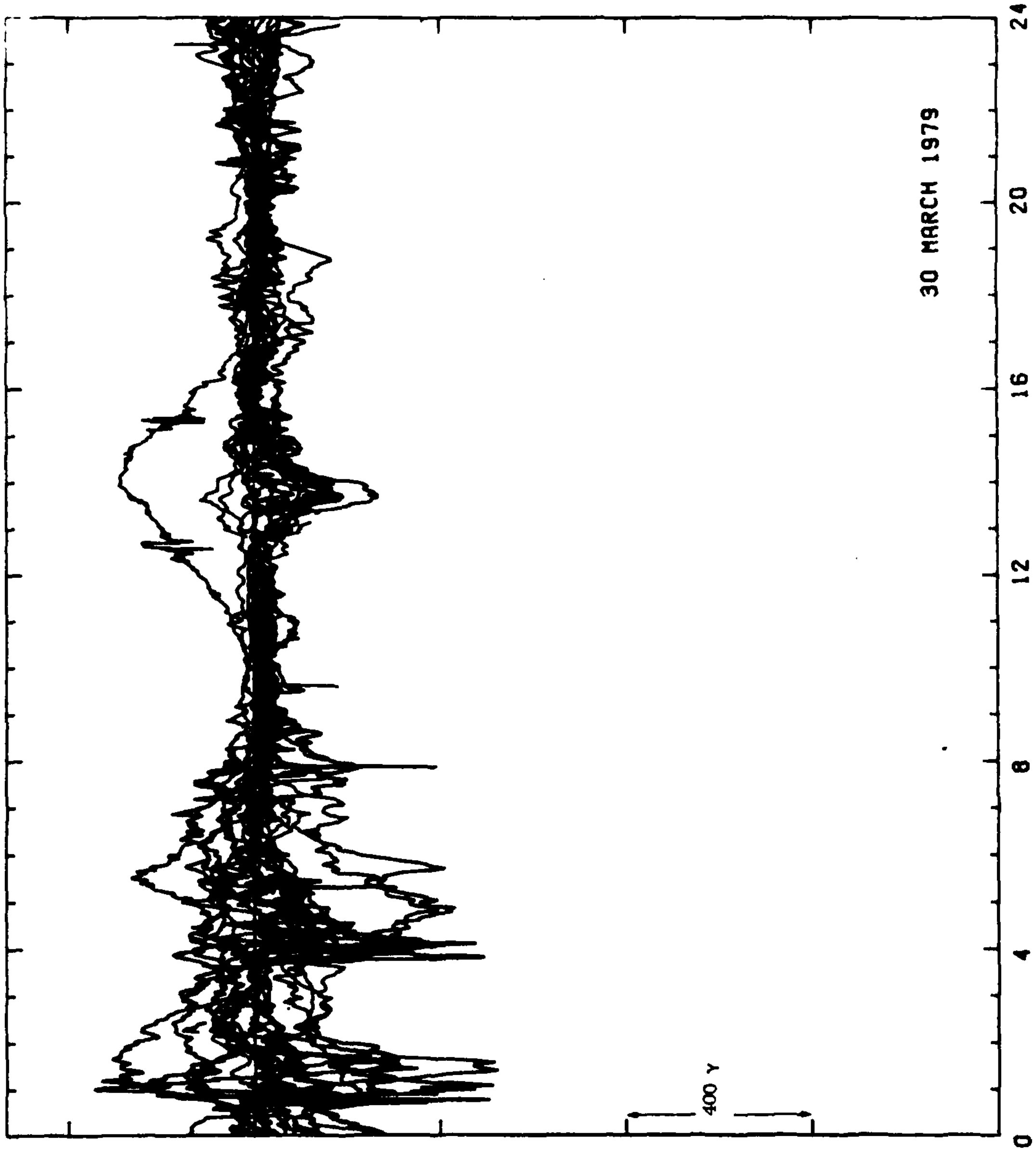
FIGURE 5

AE INDEX FOR MARCH 28-30, 1979


28 MARCH 1979
100 γ
0
8
12
16
20
24



29 MARCH 1979
0
4
8
12
16
20
24



- 35 -

discrete auroras which is a permanent feature of the dayside auroral oval observed by both ISIS-2 and DMSP satellites, and (2) the relationship of this gap with the polar cusp region. Based on two-month (June, July 1975) observations of the midday auroras over the southern hemisphere, it is found that inside the 'gap' of the discrete auroras along the dayside auroral oval, soft electron precipitations with a magnetosheath-like spectrum were invariably detected. The spatial extent of this region was about a few degrees in latitude and about 2 to 3 hours in local time near 1130 magnetic local time meridian. No significant electron precipitation was detected poleward of the instantaneous midday auroral oval. Typical plasma sheet and discrete aurora types of electron precipitations were detected in the other parts of the midday auroral oval. Therefore, it is proposed that the ionospheric projection of the polar cusp is a small region of the instantaneous dayside auroral oval near the noon meridian, coinciding with the 'gap' of the midday discrete auroras.

2. <u>The Auroral Electron Precipitation During Extremely Quiet Geomagnetic Conditions, to be published in J. Geophys. Res.</u>

The electron precipitation over the polar regions during extremely quiet geomagnetic conditions is examined based on data from 5 years of DMSP observations. A total of 12 periods were selected for this study on the basis of prolonged, extremely low values of the Kp index which persisted for at least two consecutive days. The interesting electron precipitation features can be summarized as follows:

(1) At all times, precipitation indeed occurred over both the northern and southern polar regions with significant intensity. The precipitating intensities were one to two orders of magnitude below the level for nominal, quiet ($Kp \leq 2$) auroral oval precipitations.

(2) The measured precipitating electrons were very soft, most having energies below 1 keV. The observed fluxes of low energy electrons between 50 eV to a few hundred eV were often merely the high energy tail of an extremely soft precipitation.

(3) Electron precipitation with a most probable energy of a few keV (harder than that of the auroral oval) can form a band detached from and equatorward of the morning auroral oval.

3. <u>Auroral Arcs Observed by DMSP Satellite, an Initiated Review Given at the Chapman Conference on the Formation of Auroral Arcs, the text will be Published in the AGU Geophysical Monograph.</u>

This talk reviews the electron precipitation characteristics of discrete auroras distributed over various parts of the polar region, based on the simultaneous optical auroral display observations and the electron precipitation measurements made by the DMSP series of satellites. It was found that all discrete arcs have a common feature, namely the existence of a peak in the electron differential energy spectra. The location of this spectral peak and the precipitated energy flux differs with the auroral brightness and geomagnetic activity. The precipitated energy flux varies from $\sim$ 10 erg $cm^{-2}sec^{-1}$-sr^{-1} for bright active arcs, $\sim$ 1-2 erg $cm^{-2}sec^{-1}sr^{-1}$ for normal quiet arcs to a fraction of one erg $cm^{-2}sec^{-1}sr^{-1}$for faint arcs. The spectral peak is at $\geqslant$ 8 keV for bright active arcs, $\sim$ 3 keV for normal arcs, and $\geqslant$ 1 keV for faint arcs.

REFERENCES

Bartels, J., A. Romana, and J. Veldkamp, Geomagnetic data 1958, Indices K and C, Intern. Assoc. Geomag. Aeronomy Bull., 12 ml., 1962.

Chapman, S., The morphology of geomagnetic storms: An extension of the analysis of Ds the disturbance local-time inequality, Am. Geofis. Rome, 5, 481, 1953.

Chapman, S. and M. Sugiura, Geomagnetic time, Geophys. Inst. Univ. Alaska, Sci. Rept. 2, AF 19(604)1048, January, 1956.

Davis, T. N. and M. Sugiura, Auroral electrojet activity index AE and its universal time variations, J. Geophys. Res., 71, 785, 1966.

Mead, G. D., Deformation of the geomagnetic field by the solar wind, J. Geophys. Res., 69, 1181, 1964.

Ness, N. F., The earth's magnetic tail, J. Geophys. Res., 70, 2989, 1965.

Sugiura, M. and S. Chapman, The average morphology of geomagnetic storms with sudden commencements, Abhandl. Akad. Wiss. Gottingen, Math.-Physik Kl., Sonderh. 4, 1960.

APPENDIX 1

Kp, Km, Ap, Cp, Kn, Ks AND Dst OF 1979

JANUARY 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M		Cp
		Three-Hourly Indices Kp									Three-Hourly Indices Km									aa				
1	D7a	2	3	2-	2-	2+	1	1	4	17-	2	3-	1	1+	2+	1	1+	3	10	17	16	14 20		0.5
2		3-	1+	2-	3+	3+	4-	5-	4+	25	1+	1+	2-	3	3+	3+	4+	4+	19	37	35	18 55		1.0
3		4	4-	2+	3+	3	3	4	3+	27-	3	3-	2	3	3	3	4-	4-	19	31	28	27 33		1.0
4	D1	4+	5	5-	4-	5-	5+	6-	5+	39-	4-	3+	3+	3+	5-	5	6-	4+	45	71	54	42 84		1.5
5		5+	5	3+	3-	2	3+	3	3-	27+	4+	3+	3-	2	2-	3	3	2+	23	32	24	34 23		1.1
6		4-	2+	2+	3+	4+	4	3	2+	25+	3+	3-	3	3	4	4+	4-	3	18	32	47	34 46		1.0
7	D4	1+	1	2+	3+	5-	5+	6+	4	28+	2	2-	3	3-	5-	5	6	4-	32	56	58	22 84		1.3
8	Q4a	3+	2+	3-	1	1-	1+	2	2+	16-	3+	3-	3-	2-	1-	2-	2	3-	8	14	14	18 18		0.5
9		3	5-	3+	2+	3-	3-	2+	2-	23-	3	5-	4-	2+	3	3+	3	3-	15	26	42	40 21		0.8
10	Q1	1+	1+	1-	0+	1-	0+	2	1	8-	2-	1	1	0	1	1	2	2-	4	7	6	7 7	CK	0.1
11	Q2	2	2-	1-	2+	2-	0+	0	0+	9	1-	1+	1-	2	2-	1-	0+	1-	4	8	7	11 4	CK	0.2
12	Q6a	1+	3-	2+	2	3-	2	2	3+	18+	1+	3-	3-	2-	3-	2+	2+	3	10	18	21	18 21	K	0.5
13	Q1K	3+	0	1-	1	1	1	1-	1-	8+	2+	1-	0+	1-	1	1+	1+	1	5	6	8	8 6	CK	0.2
14	Q5a	1-	2-	2+	2+	3-	3	1+	0+	14+	2-	2-	2-	2-	3	3	2-	1+	8	12	16	17 17		0.4
15		1	2	2	4-	3+	3	4	4-	23-	2+	2+	2	3	3+	3	4-	3	15	24	30	22 33		0.9
16		3+	4-	3	3-	3-	2-	1-	2-	19+	3-	3+	2+	2	2	1+	1-	2-	12	20	18	27 11		0.7
17	Q4a	3+	1	6+	2-	3-	2+	2+	3-	13+	1-	2-	1	2-	2+	3-	3-	3-	7	15	20	7 27		0.4
18	Q3A	3	3	1+	3-	3-	3	2+	2	20	2+	2-	1+	2+	3	3	3-	2+	11	18	18	17 20		0.6
19		4+	5	4-	3+	3-	2+	2+	3-	25+	4	4+	3-	3	2+	3-	3-	3	19	27	28	39 17		1.0
20		3	3	3	2+	2+	3-	3-	1+	20+	2-	3-	2+	2+	3-	3-	2+	2-	12	21	20	21 21		0.7
21	Q9a	3	3-	2	3	3	3-	2	2-	20	3	2	2-	3-	3	3-	2+	2-	11	18	21	23 17		0.6
22		4	1-	1+	2	3	1+	4+	5	18-	0+	1+	2-	2-	3	2-	4	5-	16	31	18	7 42		0.8
23	D5	3	2	2+	4+	4+	4	5+	5-	30	2	2-	2	4	4	4+	5-	5-	27	39	42	28 53		1.2
24		4-	5-	3-	3+	2+	3-	3-	3-	27-	4	3-	3-	3+	2+	3	3	3-	23	35	30	42 23		1.1
25	D2	4-	4-	4-	4-	4	4-	4	3+	34-	5-	4	3+	4	4+	4	4	3	34	52	52	58 46		1.3
26	D3	4+	4-	3	3+	3	4+	4+	5+	31+	3	3	3-	3-	2+	4+	4+	4+	28	52	39	31 60		1.2
27		4-	5	4-	3-	2+	3	4-	4+	28+	3	4	3-	3-	2	3+	3+	4-	23	41	36	36 41		1.1
28		2+	3	3-	3+	3	2+	3+	2	22	3-	2+	3-	3	2	2	3+	2	13	22	26	22 27		0.7
29		3	3	3-	2+	3+	2+	3-	3	22+	3-	2+	3-	1+	3	3-	3-	2+	13	26	25	22 29		0.8
30		3+	3-	3+	3	3+	2+	3	4	25	2+	2-	3-	3-	3	2+	3-	3+	16	36	22	38 29		0.9
31		3	3-	3-	3+	3	2-	3-	3-	22-	2	2	2-	3-	3	2-	3-	3-	13	22	19	21 21		0.7
																		Mean	16	28.0	27.0	27.5		0.80

Day	Kn 1	Kn 2	Kn 3	Kn 4	Kn 5	Kn 6	Kn 7	Kn 8	Ks 1	Ks 2	Ks 3	Ks 4	Ks 5	Ks 6	Ks 7	Ks 8	S	So	Prov Rz	IMF	
	Three-Hourly Indices Kn								Three-Hourly Indices Ks												
1	2	3-	1	1+	2+	1	1+	3	2	3-	1	1+	2+	1	1+	3	208.7°	194.1°	158	T	-
2	1+	1+	2-	3	3+	3+	4+	4+	1+	1+	2-	3	3+	3+	4+	4+	206.9	200.1	158	T	T
3	3	3-	2	3	3	3	4-	4-	3	3-	2	3	3	3	4-	4-	210.4°	203.5°	191	T	T
4	4-	3+	3+	3+	5-	5	6-	4+	4-	3+	3+	3+	5-	5	6-	4+	199.3°	192.7°	157	T	-
5	4+	3+	3-	2	2-	3	3	2+	4+	3+	3-	2	2-	3	3	2+	201.6	194.9	146	AT	+
6	3+	3-	3	3	4	4+	4-	3	3+	3-	3	3	4	4+	4-	3	197.4	190.9	173	T	T
7	2	2-	3	3-	5-	5	6	4-	2	2-	3	3-	5-	5	6	4-	192.6	186.2	163	T	T
8	3+	3-	3-	2-	1-	2-	2	3-	3+	3-	3-	2-	1-	2-	2	3-	206.9	200.1	172	TA	T
9	3	5-	4-	2+	3	3+	3	3-	3	5-	4-	2+	3	3+	3	3-	199.2	192.6	165	TA	T+
10	2-	1	1	0	1	1	2	2-	2-	1	1	0	1	1	2	2-	192.6	186.2	163	T	T
11	1-	1+	1-	2	2-	1-	0+	1-	1-	1+	1-	2	2-	1-	0+	1-	185.6	179.5	157	T	-
12	1+	3-	3-	2-	3-	2+	2+	3	1+	3-	3-	2-	3-	2+	2+	3	180.5	174.5	159	AT	-
13	2+	1-	0+	1-	1	1+	1+	1	2+	1-	0+	1-	1	1+	1+	1	200.5	193.9	159	A	-
14	2-	2-	2-	2-	3	3	2-	1+	2-	2-	2-	2-	3	3	2-	1+	206.0°	200.0°	162	TA	T
15	2+	2+	2	3	3+	3	4-	3	2+	2+	2	3	3+	3	4-	3	198.7°	192.1°	170	A	T
16	3-	3+	2+	2	2	1+	1-	2-	3-	3+	2+	2	2	1+	1-	2-	196.2°	189.9°	166	A	T
17	1-	2-	1	2-	2+	3-	3-	3-	1-	2-	1	2-	2+	3-	3-	3-	181.5	175.7	166	A	-
18	2+	2-	1+	2+	3	3	3-	2+	2+	2-	1+	2+	3	3	3-	2+	183.5	177.6	146	TA	-
19	4	4+	3-	3	2+	3-	3-	3	4	4+	3-	3	2+	3-	3-	3	194.0	187.8	130	A	A
20	2-	3-	2+	2+	3-	3-	2+	2-	2-	3-	2+	2+	3-	3-	2+	2-	203.7	197.2	177	A	A
21	3	2	2-	3-	3	3-	2+	2-	3	2	2-	3-	3	3-	2+	2-	217.3	210.3	181	A	-
22	0+	1+	2-	2-	3	2-	4	5-	0+	1+	2-	2-	3	2-	4	5-	234.2	226.9	178	TA	A
23	2	2-	2	4	4	4+	5-	5-	2	2-	2	4	4	4+	5-	5-	232.3	225.1	180	A	-
24	4	3-	3-	3+	2+	3	3	3-	4	3-	3-	3+	2+	3	3	3-	215.2	208.5	209	T	A
25	5-	4	3+	4	4+	4	4	3	5-	4	3+	4	4+	4	4	3	212.7	206.1	209	T	-
26	3	3	3-	3-	2+	4+	4+	4+	3	3	3-	3-	2+	4+	4+	4+	199.1	192.9	173	T	A
27	3	4	3-	3-	2	3+	3+	4-	3	4	3-	3-	2	3+	3+	4-	211.8	205.4	162	T	A
28	3-	2+	3-	3	2	2	3+	2	3-	2+	3-	3	2	2	3+	2	216.1	209.6	157	T	+
29	3-	2+	3-	1+	3	3-	3-	2+	3-	2+	3-	1+	3	3-	3-	2+	215.8	209.3	153	T	A
30	2+	2-	3-	3-	3	2+	3-	3+	2+	2-	3-	3-	3	2+	3-	3+	200.1°	194.1°	149	T	TA
31	2	2	2-	3-	3	2-	3-	3-	2	2	2-	3-	3	2-	3-	3-	199.5	193.7	138	T	A
																Mean	203.0	196.5	165.0		

FEBRUARY 1979

Day		Three-Hourly Indices Kp 1	2	3	4	5	6	7	8	Sum	Three-Hourly Indices Km 1	2	3	4	5	6	7	8	Ap	aa N	S	M			Cp
1	Q7	2+	2+	2	2+	1+	1-	1-	2-	13+	2+	2-	2-	2	1+	1-	0+	2-	6	13	10	16	6	C	0.3
2		3-	3-	3-	3-	2-	2-	2+	2	18+	2+	2+	2	2+	2-	2-	3-	2	10	18	15	18	15		0.5
3	Q8A	2	2-	0+	0+	1+	2	4	3+	15	2-	1	0+	0+	1+	2-	4+	3	9	20	13	7	26		0.5
4		4-	4-	3	3+	3+	4+	3	2+	27-	4-	3+	3-	3	3+	4+	3-	2+	19	29	32	29	32		1.0
5		4-	2+	3-	3	2-	0+	0+	2	16	3	2+	2+	3	2	0+	0+	2-	9	12	12	17	7	K	0.5
6		2+	4	3	3-	3	2	3-	4	24-	2+	3	3-	3	3	2+	3	3+	16	22	25	22	29		0.9
7	Q6	2-	1	1-	2-	2-	2	2	2+	13	1+	1+	1+	1+	2-	2	2+	3-	6	8	14	9	14	C	0.3
8	Q9A	3-	2+	2-	3-	1+	2+	2+	2+	18-	2+	2-	2-	3-	1+	3-	2+	2	9	16	16	16	16		0.5
9		3-	2+	2	3-	2+	2+	2-	2	18	2+	2-	2-	2	2+	3-	1+	2+	9	14	17	15	16		0.5
10	Q5	2	2-	2-	1+	2	1+	2-	2-	13+	2-	1	1	1-	2-	2-	2	1+	6	11	12	10	13	C	0.3
11		4	4	2-	2+	2	1-	2	3-	19+	4-	3+	2-	2	2-	1-	2-	3-	12	26	14	20	13		0.7
12		4-	4	4-	4-	4	2+	1+	1-	23+	3+	3+	3+	4-	4-	2+	2-	1-	17	30	20	33	17		0.9
13	Q1	0+	0+	1	1	1-	0+	0+	0+	4+	0+	0+	1-	1	0+	0+	0	0	3	4	4	6	3	CK	0.0
14	Q2	0+	0	0	1	0	1-	1-	2-	4+	0	0	0	1-	0+	1-	1-	2-	2	5	4	3	5	CK	0.0
15		1+	2	4-	3	3	3	2	1-	19-	1+	2-	3-	3	2+	3	2	1+	11	16	19	19	17		0.6
16	Q8A	1+	3+	2	2+	2	1-	1	0+	13	2+	2+	2+	2	2-	0+	1	0+	7	11	13	20	5	KK	0.3
17	Q3	0+	1-	1+	1+	1	2	1+	2-	10-	0+	1-	1	1	1+	2	2	2	5	9	6	4	10	C	0.2
18		2-	4+	4-	4	3-	2+	4+	4+	27+	2+	4	4-	4-	3	3-	4-	4-	22	37	42	45	35		1.1
19		4+	3	3-	2+	4	2+	3-	2	23+	3+	3-	2	2+	4-	3-	3-	2	15	27	20	23	25		0.9
20	Q4	2-	2-	2-	1-	1-	1+	2	3-	12+	2-	1+	1	0+	1-	2-	2+	3-	6	12	12	10	15	C	0.3
21	D1	2+	5+	7-	5	4+	5+	6+	6-	41	1+	4+	5+	4+	4	5+	6	5+	59	76	93	66	102		1.7
22	D2	4+	4-	5-	5	5	5-	3+	3+	34	4+	4-	4	4+	4+	4+	3+	4-	33	48	59	54	53		1.3
23	D3	5	5	5-	4	4	3	3+	4	33	5-	4+	4-	3+	4-	3	3+	4-	31	45	57	65	38		1.3
24		3+	3	3-	3+	3	4-	3+	3+	26-	3	2+	2	3-	3	3+	3	3+	17	21	21	27	31		0.9
25		2+	4	4-	2	3-	2-	3-	3+	22+	2+	3	3-	2	3-	2	3-	3	14	25	19	23	22		0.6
26	D5	4-	4-	3-	3-	3+	4+	4+	4	29-	3	3	3-	3-	3+	4	4	4-	22	40	37	23	55		1.1
27	D4	4-	5-	3	3+	4-	3+	2+	2	28	5-	4-	3-	3-	3	3	2	2+	24	32	22	32	23		1.2
28		4-	2	2-	3	4-	4+	4-	3-	25-	3+	2-	1+	3-	4-	4	3+	3	17	35	23	10	48		0.9
																		Mean	15	24.8	23.3	22.0			0.70

Day	Three-Hourly Indices Kn 1	2	3	4	5	6	7	8	Three-Hourly Indices Ks 1	2	3	4	5	6	7	8	S	So	Prov Rz	IMF	
1	2	2-	1+	2	1	1-	0+	2-	3-	2-	2	2+	2-	1-	1-	2-	191.4	185.8	116	T	T
2	2+	2	2	2	2-	2-	3-	2-	3-	2+	2	2+	2-	2-	3-	2	191.1	185.6	127	T	TA
3	1+	1+	0	0+	1+	2-	4	3	2-	1-	1-	0+	1+	2-	3-	3	193.0*	187.4*	148	T	T
4	3+	3	3-	3-	3+	5-	3-	2	4-	3+	3-	3	3+	4	3-	2+	193.1	187.7	123	TA	A
5	3-	2+	2+	3+	2+	0	0	2	3	2	2+	3-	2-	1-	1-	2-	203.1	197.4	134	A	A
6	2	3	2+	3+	3+	2+	3	3+	3-	3+	3-	3-	3-	2+	3	4-	212.4	206.5	146	A	A
7	1	1-	1-	1	2-	2-	2	2+	1+	2-	2-	1+	2-	2+	3-	3	209.0	203.4	144	T	T
8	2+	1+	1+	2+	1+	3-	2+	2	2+	2	2	3	1+	3-	2+	2	213.0*	207.2*	142	T	T
9	2+	2-	2-	2	2+	2+	2-	2+	3-	2	2-	2	2+	3-	1+	2+	204.2	198.7	139	T	T
10	1+	1-	1	1-	1+	2-	2	1+	2	1+	1+	1-	2	2-	2+	1+	203.7*	198.4*	137	T	A
11	3	3+	1+	2	1+	1-	2	3-	4-	3+	2-	2	2	1-	1+	2+	207.6*	202.2*	137	A	*
12	3	3	3+	4-	4-	3-	1+	1-	3+	4-	3+	4-	3+	2+	2-	1-	200.6	195.4	130	A	T
13	0+	0	1-	1	0+	0+	0	0	0+	1-	1-	1+	1-	0+	0	0+	200.4	195.4	152	A	A
14	0	0	0	1-	0	1	1-	2-	0+	0	0	1-	0+	1-	1-	1+	209.4*	204.2*	163	A	A
15	1-	2-	3	3	2+	3	2	1	2-	2-	3-	3	2+	3	2+	2-	210.3*	205.0*	161	A	A
16	2-	2+	2	2	2	0+	1	0+	3-	3-	3-	2	2-	1-	1	0+	214.3	209.2	159	A	-
17	0+	1-	1	1	1+	2	2	2-	1-	1-	1+	1+	2-	2-	2-	2+	218.3	213.1	160	A	A
18	2-	4	3+	4-	3	2+	4	4-	3-	4	4	4	3	3-	3+	3+	243.3	237.7	162	AT	A
19	3+	3-	2	2	4-	3-	3-	2	3	2+	2+	2+	4-	3-	3-	2	243.4	237.8	166	T	A
20	2-	1+	1	0+	1-	2	2	3-	2	2-	1-	1-	1-	1+	2+	3-	235.3*	230.1*	169	A	A
21	1+	4	6-	5-	4-	5	6-	5-	1+	5-	5+	4+	4	6-	7-	6-	230.2	225.1	171	TA	A
22	4	3	4	5-	4+	4+	3	4-	4+	4	4	4	4+	4+	4-	4	228.3	223.3	159	A	-
23	4+	4	3+	3+	4-	3+	3	4-	5	5-	4	4-	3+	3-	3+	4-	208.2	196.0	127	TA	-
24	3	2+	2+	3-	3	3+	3	3+	3	3-	2	2+	3-	3+	3	3+	188.7	182.8	99	T	A
25	2	3+	3	2	3-	2	2+	3	2+	3	3-	2	3-	2-	3-	3	170.9	167.5	88	TA	A
26	3+	3	3-	3-	4-	4	4	4-	3	3	2+	2+	3+	4-	4+	4-	169.4	166.0	108	T	T
27	5-	4-	3	2+	3-	3-	2	2+	5-	4-	3-	3	3	3	2	2+	165.9	162.7	97	T	T
28	3+	1+	1+	3-	3+	4-	3+	3-	4-	2	2-	2+	4-	4	3+	3+	166.0	163.6	95	T	-
																Mean	204.1	199.1	138.0		

MARCH 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M		Cp
		Three-Hourly Indices Kp									Three-Hourly Indices Km													
1		4	3+	2+	2+	2+	2+	3-	2	21+	3+	2+	2-	2+	2	2+	3-	2	12	25	18	25 19		0.7
2		4	4	3	4-	3+	3-	3	4-	27+	3+	3	3-	3	3	3-	3+	3	20	32	26	32 27		[illegible]
3		4-	1+	3-	2	3-	3+	3	3-	21+	3	1+	2	2-	2+	3	3-	[illegible]	13	23	16	17 23		0.7
4		4	3+	3+	5-	4+	3	3+	5	31	3+	3-	3-	4	4-	3+	3+	4+	27	47	37	35 47		1.2
5		3	4	3+	3	2-	1+	3-	2	21	3	3+	3-	3	1+	1	3-	2+	13	21	24	38 15		0.8
6	D5	3+	3+	4	5-	5-	5-	4+	4	33	3-	3	3	5-	4+	4	4	4-	30	42	39	35 46		1.3
7	Q5A	3-	3	1+	0+	0+	1	2-	2	12+	2+	3-	1+	0+	0+	1+	2-	2+	7	15	9	13 12	C	0.3
8	Q6A	2	2	1+	3-	2	1	1+	2+	14	2	1+	1	2+	2	1	1+	1+	7	13	10	12 11	C	0.3
9		3+	2-	3+	4-	3	2+	3-	3+	23+	3-	1-	3	4-	3-	2	2+	4-	15	21	21	27 19		0.6
10	D2	5	5-	4+	4+	4	4+	6+	7	40	5-	4-	3	4-	5-	4+	5+	6	54	91	63	54 101		1.6
11		5+	3+	3+	3	3+	3-	2-	0	23-	5-	3-	3-	3-	3-	2+	1+	0	18	35	13	29 19		1.0
12	Q4	1	2-	3-	2-	0+	1+	2+	0+	11+	1-	1	2	1	1-	1+	2+	1-	6	7	7	8 7	CC	0.3
13	Q8A	1+	3	3-	2	1+	2	0+	1-	13+	2-	2+	2+	2	1+	1+	0+	1-	7	9	9	12 6	CC	0.4
14	Q1	1-	1-	0+	0+	0+	0+	1	1	5-	0+	0+	0	0	0	0	1-	1	3	4	2	2 4	CC	0.0
15	Q9A	1-	1+	1	1	2+	3-	3-	3-	14+	1-	2-	1+	1	2+	3-	3-	3-	4	15	14	9 23		0.4
16	Q10A	3	3-	2+	3	3	2+	1+	2	20-	3-	3-	2-	2+	3-	2	2-	2+	11	21	15	22 15		0.6
17		3	3	4-	4	3	3-	2	3-	26	3	3	5	4-	3-	2	2	3	21	32	35	46 22		1.1
18	Q7A	2+	3-	2	2	3-	1+	0+	0	13+	2+	2+	1+	2	3-	1+	0+	0	7	13	9	14 9	C	0.3
19		3	0+	3-	3+	3+	3+	3	2-	18-	0+	1-	2+	3-	3	3	3-	2-	11	20	17	14 24		0.6
20	Q3	1+	2	2	2-	1+	1+	1+	2-	13-	1+	2-	2-	1	1+	1+	1+	2-	6	10	8	9 9	CC	0.3
21	Q2	0	0+	2-	1	1+	1	2+	2-	9+	0+	1-	2-	1-	1+	1+	2+	2	4	9	8	8 10	C	0.2
22	D4	4-	1-	4	6-	7-	7-	4-	3	31	1-	1+	4-	5	6-	6-	4-	3	45	45	74	33 55		1.5
23		4-	3+	3	2-	2	2+	2+	2+	21-	3	3-	3-	2	2	2	2+	2+	12	29	17	26 21		0.7
24		2+	3-	4	3+	2+	2+	3-	4-	23+	2+	2+	4-	3	2	2	3	3+	15	27	27	29 25		0.8
25		3+	4	4-	3+	3	3+	3+	4+	28+	3	3+	3+	3+	3-	3-	3	4-	21	34	32	34 33		1.1
26		4+	4-	4-	3+	4-	5-	4	4+	31	4	3+	3+	3	3+	4	4-	4-	26	42	39	33 48		1.2
27		1+	3	3	3+	3+	4-	4-	4	25+	1+	3-	3	3	3+	3+	4-	4-	18	26	31	16 41		1.0
28	D3	4	4-	4	5+	6-	5-	3	5+	36-	3+	1	3+	5-	5-	4+	3	5	39	50	43	37 57		1.4
29	D1	6	5	6+	5+	5-	6	7-	5-	45-	5+	4	5	5-	4	5	6-	4+	68	97	76	72 89		1.7
30		5	4+	3	1+	2+	2-	2	2-	21+	5-	4-	2+	1+	2	1+	1+	2	16	19	14	23 12		0.9
31		3	3+	2-	2-	3	3+	3+	5+	25-	3	3-	2	2-	3-	3	3+	4+	19	31	22	17 36		1.0
Mean																			19	28.9	24.9	27.2		0.81

Day	Kn 1	Kn 2	Kn 3	Kn 4	Kn 5	Kn 6	Kn 7	Kn 8	Ks 1	Ks 2	Ks 3	Ks 4	Ks 5	Ks 6	Ks 7	Ks 8	S	Sa	Prov R_z	IMF	
	Three-Hourly Indices Kn								Three-Hourly Indices Ks												
1	3	2+	2-	2+	2	2	3-	2	3+	2+	2-	3-	2	3-	3-	2+	171.6	168.5	116	TA	-
2	3+	3	2+	3	3	2+	3	3	3+	3	3-	3	3	3-	3+	3-	173.7	170.7	136	TA	T
3	3	1	2+	1+	3-	3+	3-	2+	3-	2-	2-	2-	2-	3	2+	1-	176.3	173.3	141	T	TA
4	3+	3-	3	4+	4-	3+	3+	4+	4-	3-	3-	4	4-	4-	4-	5-	184.4	181.4	142	T	T
5	3-	3+	3-	3	1+	1	2+	2+	3	3+	3-	3-	1	1-	3-	2+	183.0*	180.1*	135	T	T
6	3-	3	3+	4+	4	4	4	3+	3-	3	3	5-	5-	4	4	4-	185.2	182.4	144	TA	A*
7	2+	3-	1+	1-	0+	1+	2-	2	2+	2+	2-	0+	1-	1	1+	3-	185.9*	183.1*	146	T	T
8	2-	1+	1	2+	2	1	1+	1+	2+	1	1-	2+	2	1	1-	1+	181.4	178.9	143	TA	A*
9	3-	1	3	4-	3	2	3-	4-	2+	0+	3-	3+	2+	2	2	4	184.0	181.4	146	T	T
10	4+	4-	3+	4-	5	4	5	6-	5-	4-	3-	4-	4	5-	6-	6+	183.0	180.6	140	TA	A*
11	4+	3-	3	3-	3	2+	2-	0	5-	3	3-	3-	3-	2+	1+	0	184.1*	181.7*	156	T	A
12	1-	1+	2+	1+	1-	1+	3-	1-	1	1-	1+	1	1-	1+	2+	1	191.0	188.7	170	A	A
13	1+	2	2+	2	1+	1+	0+	1-	2-	2+	2+	2-	1+	1+	0+	1-	188.6	186.3	169	A	A
14	0+	0+	0	0	0	0	1-	1	0+	0+	0+	0	0	0	1-	1	191.5	189.4	159	A	A*
15	1	2-	1+	1+	3-	3-	2+	3-	1-	2	2-	1	2	2+	3-	3-	183.3	181.3	155	T	A
16	3-	2+	2	3-	3-	2	1+	2+	3-	3-	2-	2+	3	2-	2-	2+	185.4*	183.5*	130	A	[illegible]
17	3	3-	4+	4-	3-	2+	2	3	3+	3+	5+	4-	2+	2-	2-	3	179.5	177.7	142	A	T
18	2	3-	2-	2	3-	2-	1-	0	2+	2	1+	2-	2+	1+	0+	0+	190.3*	188.6*	142	A	A
19	0	1	3-	3-	3	3	3-	2-	0+	0+	2-	3-	3	3	2+	2-	179.0	177.6	130	A	A
20	1	2	2-	1+	1+	1+	1+	2-	2-	1+	1+	1	1+	2-	1+	2	189.6	186.1	120	T	AT
21	0+	0+	1+	1-	2-	1+	2+	2	1-	1	2-	1-	1+	1	2	2	183.5	182.2	134	A	A
22	1-	1	4-	5+	6-	5+	4-	3	1	2-	4	5	6-	6	4	3	182.4	181.1	140	T	T
23	3	3-	2+	2	2	2	2+	2+	3	3-	3	2	2-	2	3-	2+	189.6	188.5	139	AT	T
24	2	2	4-	3	2	2	3	3	2+	3-	3+	3	2+	2+	3-	3+	189.4	188.3	118	T	T
25	3	3	3+	3	3-	3-	3	3+	3	4-	3+	3+	3	3-	3	4-	189.1	188.2	114	T	T*
26	4	3	3+	3-	3+	4	4-	3+	4+	3+	3+	3	4-	4	4-	4	201.0	200.2	114	T	T
27	1+	3-	3	3	3	3+	3+	4-	1+	2+	3-	3	4-	4-	4	4-	188.7	187.9	117	T	T
28	3+	3-	3+	5-	5-	4+	3-	5-	3+	3	3+	5-	5-	4+	3	6-	189.2	188.6	114	T	T
29	5	4	6-	5	4+	5-	5+	5-	6-	4+	5-	4+	4	5+	6	4+	192.0	191.4	118	A	A
30	4+	4-	2+	1+	2+	2-	2-	2+	5-	4-	2	1+	2	1+	1+	2-	187.0	186.0	127	A	A
31	3-	3-	2	2-	2+	3	3+	4	3	3-	2	2-	3-	3	4-	5-	201.8*	201.4*	147	T	*
Mean																	185.8	184.8	137.3		

Appendix 1

APRIL 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M		Cp
		Three-Hourly Indices Kp									Three-Hourly Indices Km									aa				
1		4+	5-	3	4	4+	3+	2+	6+	32+	4	4	3-	4	4-	3+	2	5+	33	34	46	41 39		1.3
2		5+	5	3+	4-	4-	5-	4-	4-	34	6	4+	3	3	3	4+	3	3	36	59	56	56 58		1.4
3		3	2+	3-	3-	3-	5+	7-	8	33+	3	2+	3	3-	2+	5-	6-	7-	54	32	31	45 19		1.6
4	D5	7-	6+	5+	5+	5-	2	2-	2+	34+	6-	5+	5	5-	5-	1+	2-	2-	47	88	93	100 81		1.5
5	D2	4+	4	5-	6	7-	6+	4-	3-	38+	5-	4+	4+	5	5	5	3	3	52	40	71	36 75		1.6
6		4-	3-	3	1+	3-	3+	2+	2	21	3	2+	2+	1	2-	2	2	2-	12	51	24	68 18		0.7
7	[illegible]	2+	3	3	3-	2-	2+	2+	3+	21-	2	2	2+	3-	1	2	2-	3	12	22	15	17 21		0.7
8		3+	3-	2+	2	2-	2+	3	3+	21-	3-	3-	2+	2-	1+	2	3	3	12	19	16	17 19		0.7
9	Q6A	4	3+	1	1-	1+	2-	2-	1+	15	4-	3	2-	1	1	1-	1	1-	9	25	18	22 22		0.5
10	Q8A	1	3-	3+	2+	3	3	3-	2	20	1	3+	3	2	3-	2+	2	2	12	12	15	9 18	K	0.7
11	Q3K	1-	1	1+	1+	1+	3	1+	2	12	1-	1+	1	1	1+	2	1	1+	6	12	18	17 6	CK	0.3
12		2	3	3	3+	2+	3	3	4	24-	1+	3-	3-	3	2	2+	2+	3+	15	28	18	11 26		0.9
13	Q9A	2+	2+	2+	3-	3+	3+	2-	2+	20+	2	2	2	2-	3	3-	2-	2	11	29	16	29 16		0.6
14		2+	2+	2	3-	3-	4-	3-	5-	23	2-	2	2-	2	2-	3-	3-	4	15	18	14	21 12		0.9
15		4	3	2	3-	4+	3+	3-	3+	25+	4-	3	1	2+	3	3	2+	3-	15	34	19	35 28		1.0
16		4	5-	3+	3	2+	3-	2	1	23	4-	4	3-	2	2-	2	2-	1	15	34	35	32 27		0.9
17	Q5A	3	3-	3	2+	2	2-	3-	2+	20-	3-	2+	2+	3-	2-	1+	3-	2	11	17	16	14 20		0.6
18	Q4	2	2	1+	2+	1	1	1+	2-	13-	2-	1+	1+	2+	1	0+	1-	2-	6	16	13	17 13		0.3
19	Q2	1	2	2-	1	1	2+	1+	1+	12-	1+	2+	2-	1	0+	2	1-	1-	5	11	7	9 10	CC	0.2
20	Q1	1-	0	1-	0+	0+	1-	1-	0+	4-	0+	0	0+	0	0	0	0+	0+	2	9	6	12 3	CC	0.0
21		1	2-	2+	3-	4	4+	4	5	25	1-	2-	2	2+	4-	3+	4-	5-	22	8	18	4 13	C	1.1
22	D4	5-	6-	4	5	4+	5	5-	4+	39-	5-	4	3+	4	3	4	4+	4-	45	59	52	53 58		1.5
23		5	5	3+	3+	3+	3+	3-	2	28	5-	4+	3	3	3+	3	2	1+	23	52	39	40 43		1.1
24		3+	3+	3+	2+	2+	2	2-	4	22+	3+	3	3-	2	2	2+	2-	3	14	24	29	26 24		0.8
25	D1	8-	8	8-	7	7	5	6-	6-	54-	7-	6-	7-	6	6+	5-	4+	5	126	189	66	27 148		1.9
26	Q7A	4	2+	1	2	1	3-	3	3	19	4-	3-	1+	1+	1+	1+	2+	2+	12	51	66	103 15		0.7
27		3+	3+	3	3-	3+	5	5-	5	30+	4-	4-	2+	3	3	4-	4-	5-	27	26	17	18 26		1.2
28		5-	4	5+	4+	4-	3+	4	4	33+	4+	4-	4-	4-	3-	3-	3+	4-	31	49	50	40 48		1.3
29	D3	4	5+	5+	4+	4+	5+	5	6-	39+	4+	4	5-	4-	4-	4-	4+	5-	47	43	36	34 45		1.5
30		5+	4+	3+	4+	4+	3	3	3-	30+	5-	4	4-	4-	4-	2	3-	2-	26	66	52	75 43		1.2
																		Mean	25	35.7	31.4	33.8		0.96

Day	Kn 1	Kn 2	Kn 3	Kn 4	Kn 5	Kn 6	Kn 7	Kn 8	Ks 1	Ks 2	Ks 3	Ks 4	Ks 5	Ks 6	Ks 7	Ks 8	S	Sa	Prov Rz	IMF	
	Three-Hourly Indices Kn								Three-Hourly Indices Ks												
1	3+	4-	3	4-	4-	3+	2+	5+	4	4	3-	4	4-	3+	2	5+	202.0*	202.6*	131	T	-
2	6-	5-	3	3	3+	4+	3+	3	6	4+	3	3	3	4+	3	3	203.6	203.4	136	T	-
3	3-	2-	3-	3-	3-	5-	6-	7-	3	2+	3	3-	2+	5-	6-	7-	194.2	194.2	135	T	-
4	5-	5	4+	4+	4	2-	1+	2	6-	5+	5	5-	5-	1+	2-	2-	183.3	183.5	138	T	-
5	4	4+	4+	5+	6	6	4-	3-	5-	4+	4+	5	5	5	3	3	179.1	179.3	109	TA	-
6	3	2+	3-	2-	2+	3	3-	2+	3	2+	2+	1	2-	2	2	2-	175.9	176.3	91	A	A
7	2	3-	3-	3-	2	2+	2+	3	2	2	2+	3-	1	2	2-	3	166.4	166.7	77	AT	T
8	3-	2+	2	2-	2-	2+	3	3+	3-	3-	2+	2-	1+	2	3	3	168.5*	169.0*	69	T	T*
9	3+	3	1+	1-	1+	2	2	2-	4-	3	2-	1	1	1-	1	1-	169.1	169.6	61	TA	T
10	1-	3	3	2+	2+	2+	3-	2+	1	3+	3	2	3-	2+	2	2	172.3	173.0	87	TA	-
11	1	1	1+	1+	1+	3-	2-	2	1-	1+	1	1	1+	2	1	1+	169.2*	170.0*	109	A	A*
12	2-	2+	3	3-	2+	3-	3-	4-	1+	3-	3-	3	2	2+	2+	3+	173.6	174.5	107	A	-
13	2	2-	3-	2	3	3-	2-	2	2	2	2	2-	3	3-	2-	2	174.0	175.4	113	A	A
14	2	2	2	2+	3-	3-	3	4+	2-	2	2-	2	2-	3-	3-	4	169.9	170.9	116	TA	A*
15	3+	3-	2-	3-	4-	3	3-	3+	4-	3	1	2+	3	3	2+	3-	166.9	168.1	117	A	A
16	4-	4-	3	3-	2+	2	3-	1	4-	4	3-	2	2-	2	2-	1	170.5	171.7	119	A	A*
17	3-	2	3	3-	2	1+	3-	2-	3-	2+	2+	3-	2-	1+	3-	2	166.7	168.0	107	TA	T*
18	2-	2	1+	2+	1+	1	2-	2	2-	1+	1+	2+	1	0+	1-	2-	157.3	158.7	98	AT	A
19	1	2+	2-	1+	1	2+	1	1+	1+	2+	2-	1	0+	2	1-	1-	158.0	159.4	79	A	A
20	1-	0	0+	0	0	0+	1-	1-	0+	0	0+	0	0	0	0+	0+	154.6	156.1	68	A	A
21	1	1+	3-	3-	4-	3+	4	4+	1-	2-	2	2+	4-	3+	4-	5-	159.9	161.5	68	TA	TA
22	5-	4	3+	4+	4-	4	4-	4-	5-	4	3+	4	3	4	4+	4-	198.0*	199.7*	79	T	T
23	4+	4	3+	3	3+	3	3-	2+	5-	4+	3	3	3+	3	2	1+	160.5	162.3	79	T	T
24	3	3-	3	3-	2+	2	1+	4	3+	3	3-	2	2	2+	2-	3	160.0	161.9	68	T	T*
25	6+	7-	7	6+	6	4	4+	5-	7-	6-	7-	6	6+	5-	4+	5	170.5	172.5	85	T	T
26	3+	2	1+	2	1+	2+	3-	3-	4-	3-	1+	1+	1+	1+	2+	2+	179.7	182.0	110	T	T
27	3	3+	3+	3-	3	5-	4-	4	4-	4-	2+	3	3	4-	4-	5-	192.4*	195.1*	125	T	T
28	4+	4-	5-	4+	3+	3	3+	4-	4+	4-	4-	4-	3-	3-	3+	4-	189.4*	192.1*	132	T	T
29	3+	4+	5-	4	3+	5-	4	5-	4+	4	5-	4-	4-	4-	4+	5-	183.0	185.7	132	T	T
30	4+	4	3+	4	4-	3-	3-	3-	5-	4	4-	4-	4-	2	3-	2-	182.9*	185.2*	120	TA	A
																Mean	173.0	175.0	102.0		

MAY 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M	Cp
1		3+	4+	3+	3+	1+	3-	3	4	25+	3+	4	3	3	1+	2-	3-	3+	19	32	23	31 22	1.0
2		4-	4-	3-	2+	2+	3-	2	1	21+	4-	3+	3-	2+	2	2+	3-	1	16	22	17	26 15	0.9
3	Q5	2+	2-	1-	1+	2	2-	2	2	14-	2+	2-	1-	1+	2-	1+	2-	2	6	12	6	7 11 CC	0.3
4	Q7A	2+	1	1-	1+	1	2-	3	2+	13+	2+	1-	0+	1+	1	1+	3-	3	7	16	7	8 15 CC	0.3
5	Q9A	2	2	1+	2	1+	3-	2	1+	15-	2	2-	2-	2+	2-	2	2+	1	7	13	12	13 13 CC	0.3
6	Q1	1+	1	2-	1+	2	2	1	2	12+	1-	1	2-	2-	2-	2-	1-	2-	6	13	6	9 16 CC	0.[illegible]
7		2	1+	1+	3	4-	3-	3	2	19	2-	1-	1+	3-	3+	3-	3-	2	11	23	16	11 25	0.4
8	Q4A	1	2+	3	2-	2	2	1+	2	15+	1-	2-	3-	2-	2-	2-	1+	2	8	16	9	14 11 C	0.4
9		1	2+	3-	3+	3+	3	4	2+	22	1	2+	3-	3	3	3-	3+	2	14	25	28	17 26	0.8
10	Q6A	3-	1	1	1+	2	3	2	2-	16-	1	1-	1	1	2	3-	2	2-	7	16	11	8 17 C	0.[illegible]
11		3-	2+	4+	3	4	4	3	3+	27-	2+	2+	4	3-	3+	3	2+	3	13	34	23	27 31	[illegible]
12		2+	2+	2-	3-	3	2+	2	2	18+	2+	2+	2-	3-	2+	2-	2	2-	9	19	13	[illegible] 16	0.5
13	Q2A	2	2	2+	2-	2+	3-	2	1+	16+	2-	2-	2+	2-	2-	2	2-	1+	9	16	9	[illegible] 14 C	0.4
14		3	2+	2	2+	4-	3+	2+	2	20	2	2+	2-	2	3	3-	2	2	11	23	12	13 23	0.5
15		2+	2+	3-	2+	3+	3	2+	2+	21-	2+	3-	3-	2+	3-	2+	2	2+	12	22	14	17 22	0.6
16	Q2	2	2+	2	1-	0+	1+	2	1+	11+	2	2	2+	1	0+	0+	1+	1	5	15	7	13 4 CC	0.2
17	Q1	2-	1	1+	1-	1-	3+	1-	0	8+	1+	1+	1+	1-	0+	0	0+	0+	4	6	2	5 5 CC	0.1
18		2-	1-	1-	1+	2+	2+	4+	4-	17	1+	1-	1-	1+	2+	2	3	4+	12	20	9	4 24	0.6
19	D5	5-	4	3-	4-	4	3+	4-	4-	30+	4-	4-	3	3+	4-	3+	3	3+	26	33	34	31 36	1.1
20		3-	4	3-	2+	2+	2+	2+	3	22-	2+	4-	3	2+	2+	2+	2+	3	13	24	15	21 19	0.7
21		2+	2-	3-	2	4-	3-	4	3+	20-	1	1-	2+	2-	3+	2+	4-	3	13	21	24	12 33	0.7
22	D1	4+	4-	4-	5-	3+	5	5+	5	35	4+	4-	4-	4	3-	4	4	4+	36	56	34	33 57	1.4
23		3+	3	1	1	1-	1+	4-	3+	17-	3	3-	2-	1	1-	1-	3	3-	11	20	21	16 16	0.5
24	D3	4-	3+	4-	4	4	3+	4+	5	31+	3	3	4+	3+	4-	3	3+	4-	27	38	35	34 39	1.2
25	D2	4+	5+	4	3+	4+	5-	5	4+	35-	4-	4+	3+	3+	3+	4	4	3+	34	42	40	44 50	1.4
26	D4	3-	4+	4+	3+	4	5-	3	3	30+	4	4	3+	3-	4-	4-	3-	3-	25	43	32	38 39	1.0
27		3	4+	4-	3+	3+	3-	3	3-	25+	3	3	3+	3	3-	3-	3-	2+	17	31	26	29 24	0.9
28		3	2	2-	2+	2	3	4	2+	18+	3-	2-	1+	1-	2-	2+	3	2+	11	28	11	10 29	0.6
29		2	1	1+	2-	2-	2+	4-	7	23-	2-	1	1+	2-	2	2	5-	6-	33	52	18	5 61	1.3
30		1+	4-	3	2-	2-	2-	1	1-	17-	3+	4-	3	2-	1+	1+	1+	1+	12	16	13	27 8	0.4
31	Q4	2+	1	3+	2+	2-	2	3-	1-	11	0+	1-	1	3-	2-	2-	2-	0+	6	14	6	7 13 CC	0.3
																		Mean	14	25.2	16.6	20.9	0.68

Day	Ka 1	Ka 2	Ka 3	Ka 4	Ka 5	Ka 6	Ka 7	Ka 8	KA 1	KA 2	KA 3	KA 4	KA 5	KA 6	KA 7	KA 8	S	Sa	Prov Rz	IMF
1	3	4	3	3+	2-	3-	3-	3+	4-	4-	3	3	1-	1	2+	4+	177.6	166.4	160	T *
2	4	3	3	2+	2	2+	3-	1+	3+	3+	3-	2+	2-	3-	3-	1	176.4	179.2	186	T -
3	2+	1+	1-	1+	2	2-	2	2	3-	2	1-	1	2-	1-	1+	2	161.6	164.3	163	T -
4	2	1-	1-	1+	1	2-	3-	3-	2+	1-	0+	1+	1-	1-	3-	3	173.1	176.3	112	AT -
5	2	2-	2-	2	2-	3-	2	1+	2	2-	2-	3-	1+	1+	1+	1-	166.6	169.6	113	TA T
6	1	1	2-	2-	2+	2	1+	2	3+	1	1+	1+	1+	1	0+	1	168.1*	171.1*	122	A A
7	2	1	1+	3	4-	3-	3-	2+	1+	1-	1+	2+	3	2	3-	2-	174.7	178.6	148	A A
8	1-	2-	3	2	2+	2+	2-	2+	0+	2-	3-	2-	1	1	1	2-	179.2*	182.4*	165	A A*
9	1+	3-	3	3+	3	3	3+	2+	1-	2	2+	3	3	2	3+	2	177.9	181.7	162	A A
10	1+	1	1+	2-	2	3	3-	2	1	1-	1	1	2-	2	1+	1+	171.3	174.7	145	A -
11	2+	2+	4+	3-	4+	3+	3-	3+	2	2	4-	2+	3	3-	2	3-	175.1	178.6	140	TA T
12	2+	2+	2-	3	3-	2+	2+	2	3-	2+	2-	2	2	1+	1+	1+	163.4	184.2	154	A A
13	2	2-	2+	2	2+	3-	2	2-	1+	1+	2	1	1+	2-	1+	1	182.8	186.6	163	T T
14	2	2+	2	2	3+	3	2+	2	2-	2	2-	2	2+	2-	1+	2	178.1	182.0	203	T A
15	2+	3-	3-	2+	3	2+	2+	3-	2	3-	3-	2	2+	2+	2-	2	178.0	181.9	207	A A
16	2-	2	2+	1+	1-	1-	2-	1+	2+	2	2	1-	3+	0+	1-	1-	172.4	176.4	187	T A
17	1+	1+	1+	1-	1-	2+	1-	3+	1+	1	1+	1-	3+	0	0+	2	143.5	147.7	164	T A
18	1+	1-	1	2-	3-	2+	3+	3+	1+	1-	3+	1	1+	1+	2+	3	167.3*	171.3*	148	T T
19	4	4-	3	4-	4-	4-	3	4-	4-	4-	3	3+	3+	3	3-	4-	157.7	161.5	169	T T
20	2+	4-	3	3-	3-	3-	3-	3-	3-	4	3-	2	2+	2	2-	2	152.3	159.6	107	T -
21	1	1	3-	2	3+	2+	3+	3	1	0+	2+	1+	3+	2+	4	3+	151.9	155.7	114	T -
22	4+	3+	4-	4	3	4	4	4	5-	4	4-	4	2+	4	4+	4+	152.7*	156.5*	111	T T
23	3+	3	2-	1+	1	1	3-	3	3	3-	2-	1-	1-	1	3+	3-	192.6	196.0	117	AT A
24	3	3	4	3+	4-	3	3+	4-	3	3	4+	4-	4-	3+	1	4-	195.2*	199.2*	119	T T
25	4-	4+	3+	3	3+	4	4-	3+	4+	4+	4-	4-	3+	4	4+	4-	149.4*	153.3*	124	T T
26	4	4-	3+	3	4-	4	3-	3-	4	4	4-	3-	4-	4-	3-	3-	145.2	149.1	123	T *
27	3-	3	3	3	3	3-	3-	2+	3+	3+	3+	3	3-	3-	3-	2	145.5	149.4	119	T T
28	3-	2-	2+	1-	2	3-	3+	3-	3-	2-	1+	0+	2-	2-	3-	2	145.3	149.2	111	TA T
29	2	1+	1+	2+	2	3-	5+	6+	2-	1	1	2	2	1+	4-	4+	145.1	150.2	113	A A
30	4-	4-	3	2+	2	2	1	1-	3	4-	4+	1	1	1-	1-	1-	156.1	150.4	95	A A
31	2+	1	1+	3	2+	2+	2	1-	2	1-	0+	2	1-	3+	1+	1	170.1	174.9	120	AT AT
																Mean	165.2	168.9	134.9	

JUNE 1979

Day		Three-Hourly Indices Kp 1	2	3	4	5	6	7	8	Sum	Three-Hourly Indices Km 1	2	3	4	5	6	7	8	Ap	aa N	S	M		Cp
1	Q4	1-	1	1	1	1-	1+	1	3-	9+	1	1	1+	1-	0+	1+	1-	2-	5	14	4	7	12 CC	0.2
2	Q6	2-	2-	1-	2	1+	1	1-	3-	12-	1+	2	1-	2-	1	1	0+	2+	6	16	4	11	10 CC	0.3
3	Q2	1-	0+	0+	1	1+	1+	1+	2-	8	1	0	0+	0+	1	1	1+	2-	4	11	6	2	15 CC	0.1
4	Q7	1+	2-	2-	2	2	1+	2	1-	13-	1+	1+	2-	2	2-	1	1+	0+	6	16	8	11	13 KK	0.3
5	Q1	1	1	2-	1	1+	1-	1-	1-	8	1-	1-	1	1-	1+	1-	1-	0+	4	14	4	13	6 CK	0.1
6	D2	1	1+	1-	3-	4-	3	7	6	25+	1-	2-	1-	2+	3	3-	5+	5	34	51	20	9	70	1.3
7	D1	4-	5	5-	2-	3	4+	4+	3+	30	4-	5-	4-	2-	3-	3+	3	3	26	43	25	37	33	1.2
8		3	3-	2+	3-	3-	3	4-	3-	23-	3	3-	2+	2	2	2+	3-	2+	14	28	14	28	23	0.8
9		2+	3-	2+	3+	3+	4-	4-	3-	24	2+	3-	2+	3-	2+	3	3+	3-	15	29	20	21	29	0.9
10		2+	3-	3	3	3	3+	3+	2+	23	2+	2+	3	3	2+	3-	3-	2	14	29	20	22	28	0.8
11		2+	3	2+	2	3	3-	2-	2	19	2-	3-	2+	2-	2+	2	1+	2-	10	22	12	16	18	0.6
12	Q9A	2	2+	2-	1-	1	1-	3	2	13+	2	2+	2-	1	1-	1-	2	2-	7	13	5	9	18 CK	0.3
13		1+	1	0+	1+	3-	3	2+	3-	15-	1+	0+	0+	1+	2+	2+	2-	2+	8	15	9	6	19 KC	0.4
14		2+	2+	2-	2-	2-	2+	2-	1+	15	2-	2+	2-	2	1+	2-	1+	1	7	18	7	13	12 CC	0.4
15		1	2+	3-	1+	3-	2+	3-	3	18	1-	2	3-	2-	2	2-	2+	2+	13	16	10	18	16 C	0.5
16	D5*	3-	3-	3+	2+	4	3-	4-	3	24+	3-	3	3+	3-	4-	3-	3	3	16	29	22	19	33	0.9
17		2+	3+	2+	2	4-	4	3	2	23-	3-	3	2	2	3-	4-	3-	2-	14	28	24	28	34	0.8
18	Q5	1+	2+	2-	1+	1	2-	2-	1+	12+	1+	2+	2-	1	1-	1-	1+	1-	6	16	4	10	11 C	0.3
19	Q8	1+	3-	2	1+	1+	1+	1+	2-	13	1+	3-	2	2-	1+	1	1	1+	6	15	7	11	11 CC	0.3
20		2-	1	2	1	2+	2+	3-	3-	16-	2-	1	2	1+	2+	2	3-	2+	8	21	10	7	24	0.4
21		2-	2+	3	2+	3	3+	4	4-	23+	2-	2+	3+	2+	3-	3-	3+	3+	15	34	21	14	42	0.9
22	D3	4	2	3+	3-	4-	4+	5+	3+	29-	4-	2-	3-	3-	3	4-	4	4-	24	36	29	26	39	1.2
23	D4*	3	4-	4	4-	3-	3-	3-	4	26+	3	4-	4-	3+	2+	3-	3-	4-	19	30	22	25	28	1.0
24		3-	3+	3	2	2-	1+	2	2	18	3-	3	3	2-	1+	1+	1+	2+	10	16	13	17	12	0.5
25		2+	3-	2+	2	2-	1+	3	2-	17	2-	3-	3-	2	2-	1+	3-	1+	9	18	15	16	18	0.5
26		0+	1	2-	2	5	4+	4+	4	23-	0+	1	1+	3-	4-	3+	3+	4-	20	39	23	9	53	1.0
27		3	3-	2+	3-	3-	3-	1+	0+	16-	3-	3-	2+	2+	3-	2+	1	0+	10	17	16	15	18	0.6
28	Q3	0+	1	2	1-	1-	1-	2-	1+	8+	0+	1-	2	0+	0+	1-	1	1+	4	9	4	5	8 CK	0.1
29	Q10A	1+	0+	0+	1+	2	2	3+	2+	13	1+	1-	0+	1+	2-	2	3	2	7	17	12	8	21 K	0.3
30		2	2-	2-	2-	2-	4-	2+	3	16-	2	2	2-	2-	1+	3-	1+	3-	10	22	8	9	22	0.5
																		Mean	12	22.7	13.5	18.4		0.58

Day	Three-Hourly Indices Kn 1	2	3	4	5	6	7	8	Three-Hourly Indices Ks 1	2	3	4	5	6	7	8	S	Se	Prov Rz	IMF	
1	1+	1+	1+	1	0+	2-	1	2+	0+	1-	1	0	0	1	0+	1+	184.2	189.5	121	T	T
2	1+	2	1	2	1+	1+	1	3-	1+	2+	0+	1+	0+	0+	0	2	201.0*	206.0*	152	T	T
3	1	0+	0+	1-	1+	1+	1+	2	1	0	0	0	1	1-	1	1+	210.0*	216.1*	161	T	T
4	2-	2-	2	2	2+	2-	2	1	1-	1	1	2-	1+	0+	1-	0	222.4*	228.0*	178	A	A
5	1	1+	1+	1	2-	1	1+	1	0	0+	1-	0+	1-	0+	0	0	223.5	230.2	207	-	-
6	1	2-	1	3-	4-	3	4	5+	0	2-	0+	2-	2	2-	4+	5-	231.2	238.1	226	A	A
7	4-	5-	4-	2	3	4-	3+	3+	4	5-	4	1+	2	3-	3-	3-	231.2	238.1	222	-	-
8	3-	3-	2+	2+	3-	3	3	3-	3	3-	2+	2-	1+	1+	2+	2	235.6	242.7	220	TA	A
9	2+	3	3-	3	3-	3+	3+	3-	2+	2+	2	3-	2-	3-	3	2+	240.0*	247.4*	231	TA	A*
10	2	2+	3	3	3	3	3-	3-	2+	3-	3	3-	2-	2	2+	1	232.7	239.9	205	A	A
11	2	3-	2+	2	3-	3-	2-	2+	2-	2+	2	1+	2-	1+	1+	1	222.7	229.6	186	TA	A
12	2+	2+	2	1+	1	1	2+	2+	1+	2	1+	0+	1-	0+	2-	1+	202.0	208.3	199	A	A
13	1+	0+	1-	2-	3-	3-	2	2+	1	0+	0+	1+	2-	2-	1+	2+	187.7	193.7	172	A	A
14	2	3-	2+	2+	1+	2+	2-	2-	2-	2+	1	1+	1+	1+	0+	0+	179.9	185.7	149	A	A
15	1-	2+	3-	2	3-	2+	2+	3-	1-	2-	2+	1+	1+	1+	2+	2	170.9	176.0	127	T	T
16	2+	3	3+	3	4-	3-	3	3-	3	3-	3	2+	3	3-	3	3	162.3	167.5	103	T	T
17	2+	3	2+	2	3	4-	3	2	3-	3	2-	2+	2	3+	3-	2-	153.2	158.1	122	-	T
18	2-	2+	2-	1+	1+	1+	2-	1	1+	2-	1+	0+	0+	0+	1	0+	147.7	152.0	128	AT	T
19	1+	3	2-	2-	1+	1+	1+	1+	1+	3-	2+	2-	1	1-	0+	1	141.5	146.2	110	T	T
20	1+	1	2+	2	3-	3-	3-	3-	2	1-	2-	1-	2-	1+	3-	2	146.7	151.5	111	-	T
21	2	2+	3+	2+	3	3	3+	3+	1+	2+	3	2	3-	2+	4-	3+	144.1	148.9	124	T	T
22	4-	2-	3	3-	3	4-	4	4-	4-	2	2+	3-	3+	3+	4-	4-	136.6	141.1	108	A	A
23	3-	4-	4	3+	3	3-	3-	3+	3+	4	4-	3	2-	3-	2+	4-	134.6	139.0	96	T	T
24	2+	3	3	2-	2-	1+	2-	2+	3-	3	3	2-	1+	1+	1+	2+	136.7	141.2	90	A	A
25	2	3	3-	2	2-	2-	2+	2-	2-	3-	2+	2	2-	1-	3-	1	143.1	147.0	120	T	T*
26	1-	1+	1+	2+	4	3+	3+	4-	0	1	2-	3-	4-	3	3+	3+	148.0	153.7	132	-	T
27	3	3-	3-	3-	3	2+	1+	1-	2+	3-	2	2-	3-	2	1-	0	153.3	158.5	112	TA	T
28	1-	1	2+	1	1-	1+	1+	2-	0	0+	1+	0	0	0+	1-	1-	153.9	159.1	120	T	T
29	1+	1-	1-	2-	2	3-	3	2	1	0+	0	1	1	1+	3	2-	161.4	166.9	124	TA	T*
30	2+	2	2-	2+	2-	3+	2	3	2	2	2-	1+	1-	2-	1-	2+	170.9*	176.7*	154	T	T
																Mean	180.3	186.0	150.9		

Appendix 1

JULY 1979

Day		Three-Hourly Indices Kp 1	2	3	4	5	6	7	8	Sum	Three-Hourly Indices Km 1	2	3	4	5	6	7	8	Ap	aa N	S	M	Cp
1	D3	2	2-	3-	2-	1+	2+	2-	1+	15-	2	2	3-	2+	1+	2-	1+	1	7	17	9	13 13 CK	0.4
2	Q3	2-	1-	0+	1-	1	1	1+	1	8-	2-	1-	0	1-	1	3+	1-	1-	4	9	3	5 7 CK	0.1
3		1-	1-	2+	4+	4-	3	3	3	21-	1-	0+	3	4	3	3-	2+	3-	16	32	11	16 25	0.8
4		3	3+	3	2-	1+	1-	1	1+	15+	3-	3+	3+	1+	1+	0+	1	1+	9	23	7	22 7	0.5
5		1-	2-	2+	2+	2+	3	3	2+	18-	1-	1+	2-	2+	2-	3-	2+	2	9	18	13	10 1+	0.5
6	D1	1	2	3-	4	3-	2+	4	4	25-	1	2+	3-	3+	2+	2	5-	3+	22	42	21	25 47	1.1
7	D1	4	4	3	2+	5+	5+	3+	2+	30-	4-	3	3-	2	4+	4-	3-	2	27	35	13	24 43	1.2
8		2	2+	2+	2	2+	3	2+	2+	19-	2	2+	2-	2	2-	2+	2	2+	9	22	9	15 17	0.5
9	Q9	1	2-	1+	1	1+	1	1+	1+	12	1	2-	1	1+	2-	3-	1-	1+	6	15	9	3 16 <<	0.2
10	Q7	1	2-	1-	1-	2	1+	2+	2	12-	0+	2-	1-	1	2-	1	2-	2-	6	12	6	5 12 CK	0.2
11	Q4	1	1+	1+	1+	1-	1-	1	1	8+	1	1	2	2	1-	0+	1	1	4	6	4	7 4 CC	0.1
12		1-	1	0+	1	1-	4	4	2+	16	2+	1	1-	1-	2	3+	3+	2-	11	24	12	4 32	0.6
13		3-	3-	2+	2+	4-	5-	3	2-	23	2+	3-	2+	2+	3+	3+	2	1	15	26	17	17 26	0.9
14		2	1+	1	2+	3-	2-	5-	4+	20	2	2-	1	2	2+	1+	4-	4-	14	26	15	9 33	0.5
15		4-	4-	3	3+	3-	3-	3	2+	24-	3+	3	3-	3-	2+	2+	3	3-	15	30	21	31 22	0.5
16		3	2+	3-	1+	2	2+	3	3+	20	1	2+	3-	2	2-	1+	3-	1	11	24	12	15 20	0.4
17		3+	3	2-	2-	1	2+	2+	4+	23-	3-	3	2-	3	3	2	2+	4	14	31	14	22 33	0.5
18		3+	3	3+	3-	3-	2+	3-	4-	24-	3	3-	3	3-	3-	2	2	3+	15	20	15	33 22	0.6
19		4-	3+	2+	1	2+	2-	2-	3	19	4-	3+	2	1	2+	1+	2-	7	11	21	14	29 18	0.5
20	D5*	1	2+	2	4	5-	3	3+	4	24+	1	2+	2	3+	4-	3-	3-	4-	17	31	22	19 33	1.1
21		2+	2+	2-	3-	2	2	3-	3-	18+	2+	3-	2-	3-	2-	2-	2	2-	9	17	15	15 14	0.5
22	Q6	2-	2-	2-	1	1	2-	2+	1	12	2-	2-	2	1+	1-	1+	1+	1-	6	15	4	18 9 CC	0.3
23	Q8	1-	2+	1+	1	1+	1+	2	2	12	1-	3-	2	1	1+	1+	1+	2	5	13	5	9 11 CC	0.3
24	Q5	2+	2-	1	1-	2-	1+	1	2-	11+	2+	2-	1+	1-	1+	1	1-	1+	5	14	5	5 10 CC	0.2
25	Q2	1+	1+	1-	0+	0+	1-	1-	1-	6	2-	1+	1	1+	0	3+	3+	1-	3	8	3	7 4 CC	0.1
26		1-	1	2-	1+	1+	2-	5-	6-	18	0+	1	2	2-	1+	1+	4	5	17	28	21	9 42	0.9
27	D4	5+	4+	2-	3	2+	5-	3	3	27+	5	4	2-	3-	2+	3+	2+	3-	23	39	17	35 32	1.1
28		4+	3	2+	1-	1-	2-	2	3	18-	4-	3-	1-	1-	1	2-	1+	3-	13	21	7	15 12	0.6
29	D2	3-	3-	3+	3	4	4	5	4+	29	3-	3	3+	3	3+	3+	4-	4-	24	53	25	26 53	1.2
30		3	2	2-	3	3-	2+	2	1	18-	3-	2	2-	3-	3-	2	2-	1	9	20	17	21 17	0.5
31	Q1	2+	1+	1-	1-	0+	0+	0+	0+	6+	0	1	0+	0+	0+	0+	0+	0	3	5	4	5 3 CK	0.0
Mean																			12	22.9	12.0	17.0	0.54

Day	Three-Hourly Indices Kn 1	2	3	4	5	6	7	8	Three-Hourly Indices KS 1	2	3	4	5	6	7	8	S	Sa	Prov Rz	IMF	
1	2	2-	3	3-	2-	2+	2-	1+	2	2	2	2-	1+	1-	1	3+	180.2	186.3	158	T	T
2	2-	1+	3+	1	2-	1	1+	1+	2-	1-	0	3	3	3	2+	0+	196.3*	[illegible]	169	AT	T-
3	1	1-	4-	5-	3+	3	2+	3	0+	0+	3-	3+	2+	2	2	2	208.6	217.6	205	-	-
4	3-	3+	3+	2-	2-	1-	2-	2	3	3+	3+	1	0+	0+	0+	1-	213.9	218.1	219	TA	A
5	1	2-	2	3-	2	3	3-	2+	1-	1+	2-	2	1	2-	2	2-	197.4	234.5	212	TA	A
6	1	2+	3	4-	3-	2+	5	4-	1+	2	2+	3-	2	2-	4+	3	234.6	211.3	243	TA	A
7	4	3+	3	2+	4+	4	3	3-	3	3-	2	2-	4+	4-	3-	1+	233.6	207.2	223	AT	A
8	2+	2+	2+	2+	2+	3-	3-	3-	2-	2	1+	1+	1+	1+	1+	2	199.9	226.7	219	A	A
9	1+	2-	1+	1+	2-	3-	1	2-	1-	2-	0+	1+	1+	2+	3+	1	191.6*	197.9*	191	TA	A
10	1-	2	1	1+	2	2-	2+	2+	0+	2-	0+	3+	1	3+	1	1	179.8	189.9	163	A	A
11	1+	1+	2+	2+	1-	1-	1+	1+	1-	1-	2-	1+	0+	3	0+	1-	172.7	179.6	155	AT	A*
12	1-	1	1-	1	3-	4-	3	2	0+	1-	0+	0+	1+	3-	3+	1+	164.7	178.1	165	T	TA
13	3-	3-	2+	3-	3	4-	2+	1+	2+	3-	2	2	3+	3-	2	1-	155.2	151.6	162	T	T
14	2	1+	1+	2+	3-	2	4-	4	2	2	1-	1+	2-	1-	3+	4-	149.9*	156.7*	127	TA	-
15	3+	3	3-	3-	3-	3-	3	3	3+	3	3-	2+	2	2+	3-	3+	146.3	151.1	121	T	T
16	3-	2+	3-	2+	2	2	3-	3+	3+	2+	3-	2-	1+	0+	2	3-	139.4	143.6	116	T	T
17	3-	3	2-	1-	3+	3-	3-	4	3-	3	2	1	1-	2-	1+	4	138.1	142.7	109	TA	T
18	3	3	3	3-	3-	2+	2+	3+	3+	2+	3	2+	3-	2-	2	4-	136.7	141.2	149	T	T
19	3+	3	2+	1+	3+	2	2	3	4	3+	2	1-	2-	1-	1	1	139.5	143.6	135	AT	T
20	1	2+	2+	4-	4-	3+	3	4+	1	2+	2-	3+	3+	3-	3-	4-	141.9	144.4	150	T	T
21	2+	3	2	3	2	2	2-	2	2+	3-	2-	2+	2-	1+	2+	1	139.2*	143.7*	151	T	T
22	2	2-	2	2-	1	2	2-	1	1+	2-	2-	1	3+	3+	1-	3+	150.9	155.7	152	T	T
23	1-	3-	2	1+	2-	2-	2-	2+	0+	3-	2+	0+	1-	1	1+	1+	150.0*	163.1*	156	T	*
24	2+	2-	1	1	2-	1+	1	2-	1-	2	1+	0+	1	1-	0+	1-	163.6	168.6	163	T	T
25	2-	1+	1+	0+	0+	1	0+	1	1+	1+	1-	0	0	0	0	2+	159.4	166.5	144	A	A
26	1-	1+	2+	2+	1+	1+	4+	5	3	1-	2-	1+	1+	1	4	5-	160.5	165.0	142	T	T
27	5-	4	2	3+	3-	4	3-	3	5	4-	1+	2-	2	2+	2	2	154.3*	159.1*	146	TA	T*
28	4-	3-	1-	1+	1+	2	2	3	4-	3-	0+	2+	0+	1	1	2	153.3	158.1	132	T	T
29	3-	3	4-	3+	4-	4	4	4	2+	3	2	2+	3-	3-	3+	3+	152.3	156.7	160	A	A
30	3	2+	2-	3	3-	2+	2	1+	2+	2	1+	2+	2+	2-	2-	2+	155.5	163.3	150	A	A
31	0+	1	0+	1-	0+	0+	1	3	3	1-	0+	0+	0	3	0	0	144.0	152.4	144	A	TA
Mean																	169.9	171.4	159.9		

AUGUST 1979

Day		Three-Hourly Indices Kp									Three-Hourly Indices Km								Ap	aa			Cp
		1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8		N	S	M	
1		0+	0+	1-	4-	5-	4-	3	4-	20	0	0	0+	3+	4-	3-	3-	3+	16	34	23	16 43	0.9
2		3	3	3+	3	1+	2+	2	1-	19-	3-	3-	3+	3-	1+	2+	2-	1-	11	28	16	26 11	0.6
3		2	3	3	3+	2	2-	1	2+	18+	2-	3	3	3	3-	1+	1+	2+	10	19	24	25 10	0.6
4		2+	3+	3+	3-	3+	3-	4	3-	24+	3-	3	3	2+	3	2	3+	3-	16	31	23	22 33	0.9
5	Q8A	1	3-	2	1+	1-	2+	3-	2+	15	1	2+	2	2-	1-	2-	2+	2	8	19	8	10 13 C	0.4
6		3	3+	4	4	4	3+	2	2	26-	3-	3	4	3+	3+	3-	2-	2-	18	34	25	35 25	1.0
7		2	2	3	2	2	2+	3+	3-	19+	2-	2	3+	2+	2+	2	3+	3-	10	22	25	19 29	0.6
8	Q9A	2	2	2-	2-	2	2	3-	2	16	2-	2+	2-	2-	2-	2-	2+	2-	7	19	11	12 14	0.4
9	Q4	2+	2	2-	2	2	2+	1+	0+	14	2	2-	1+	2-	2-	2-	1	0+	6	14	9	13 11 CK	0.3
10	Q5A	1-	1+	1	2-	2	2	3	3-	14+	0+	1+	1	1+	2+	2+	3-	2+	7	15	12	5 22 KK	0.4
11	Q10A	2+	2-	1+	2	2+	2-	3+	3+	18	2+	2-	1+	1+	2	1+	3-	3-	10	21	13	12 22	0.5
12		3	2	2+	4	2-	2-	4-	5+	24-	3	2	2+	3+	1+	2-	3+	5-	15	34	29	29 35	1.0
13	D2	3	1	3+	7-	7+	7-	7	6-	41-	3	1+	4	5+	6	5+	5+	5-	76	80	81	53 100	1.8
14	Q7A	3+	2-	1+	1	2-	2	2	2-	15-	3+	1+	1+	1-	1	2-	2	1+	7	15	9	12 12 C	0.4
15	Q1	1-	1+	1	1-	1	1+	1+	2	9+	0+	2-	1+	0+	1-	1+	2-	2-	4	9	6	4 12 CC	0.2
16	Q3	1+	1+	2+	1+	2-	1-	1-	1+	11-	2-	1+	2+	2-	1+	1-	0+	1	5	10	7	16 4 CC	0.2
17	Q6A	2	1+	2	1-	1-	3	3+	1	14	2	2-	2	1	0+	2+	3-	1	8	13	11	8 16 KK	0.4
18		1+	1-	1	1	2+	2+	2+	5	16	1+	1	1	1	2	2	2+	4+	11	20	13	5 36	0.7
19	D4	6-	5	4+	5	4+	4-	3-	4-	34+	5	4+	4+	4+	4-	3+	3	4-	35	55	53	67 39	1.4
20	D3	3+	3-	4-	3-	3+	7	6+	4+	33+	3+	3-	4	3	3	6-	5+	4-	42	87	46	33 100	1.5
21	D5	5	4	4-	3+	3+	3-	4-	2+	28	5-	4-	3+	3+	3	3-	3	2+	22	33	25	32 27	1.1
22		3	3-	3-	2+	3	3	3-	2	21+	3-	3-	3-	2+	3-	2+	3-	2-	12	24	13	15 22	0.7
23	Q2	0+	1	2-	1+	2	1	2-	1	10	1-	1	2-	1	1+	0+	1+	1	5	9	4	4 7 CK	0.2
24		1-	1-	1+	2-	2+	5-	4	3-	18	0+	1	1-	2-	2	4-	3+	3-	13	27	14	5 36	0.7
25		2-	2-	3	4+	4-	4	5-	4+	27+	2-	2+	3	4-	3+	3+	4-	4-	22	36	37	20 45	1.1
26		4-	3	3+	3-	3	2+	4-	1+	23	3	3-	3+	2+	3-	2	3	1	15	20	17	27 19	0.8
27		2-	3	3+	3	2	3+	3-	1+	20+	2-	3	3	3	2+	3-	2+	1+	12	22	22	25 19	0.7
28		3	3-	2+	3	2+	2	1-	3-	19-	2+	2	2+	3-	2	2+	1	3-	10	19	16	18 16	0.6
29	D1	3	5-	5+	5+	6	8-	7-	6	45-	2+	4	4+	5	5+	6	6-	5	77	75	98	59 111	1.8
30		5-	4	3+	3-	2-	2-	2-	1+	21	4+	4-	3	2+	2-	1	1+	1+	15	23	22	34 11	0.6
31		1	1+	2	3	4	3-	3-	3	20-	1+	1+	2	3	3+	2	3-	3-	12	19	21	15 25	0.7
																		Mean	19	28.0	23.2	24.3	0.75

Day	Three-Hourly Indices Kn								Three-Hourly Indices Ks								S	Sa	Prov Rz	IMF	
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8					
1	0+	0	0+	4-	4	3	3	3	0	0	0	3	3	2	2	3+	144.0	149.1	115	A	A
2	3-	3	4-	3	2-	3-	2	1-	3	3-	3+	3-	1+	2	1+	0+	139.7*	143.9*	96	T	A
3	2	3	3	3	3-	2-	1+	3-	2-	3	3	3+	2+	1+	1	2+	140.3	145.1	121	AT	A
4	3-	3	3	3-	3	2+	3	3+	2+	3	3	2	3	1+	4-	3	137.7	141.7	113	A	A*
5	1	2+	2	2-	1+	2+	3-	2+	1-	3-	2+	1+	0	1+	2	2-	137.6	141.6	93	T	-
6	3	3+	4+	3+	4-	3	2	2-	2+	3-	4-	3	3-	3-	1+	1+	145.3	149.5	104	A	A
7	2-	2-	3+	2+	2+	2-	3+	3-	2-	2+	3	2+	3-	2+	3+	2+	147.3	151.1	110	T	T
8	2	2	2-	2-	2	2	3-	2	1+	2+	2-	2	1+	1+	2+	1	148.5	152.7	132	TA	-
9	3-	2-	1+	2-	2	2-	1+	0+	2-	2-	1	1+	2-	2-	1-	0	153.3	157.3	115	A	-
10	1-	1+	1	2-	3-	3-	3	2	0+	2-	1	1+	2+	2-	2	2+	148.1*	152.1*	92	A	-
11	2+	2-	1+	2-	2	2-	3	3	2+	2	1	1+	2-	1	2+	3-	150.3	154.4	84	T	T
12	3-	2	3-	4-	2	2	4-	5	3	2+	2+	3+	1-	1	3+	4	141.0	144.0	87	T	T*
13	3-	1+	4	5+	6	6	5+	5-	3	1+	4-	5+	6-	5-	6-	4+	151.9	155.8	91	T	T
14	3	1+	1+	1	2-	2	2	2-	4-	1+	1	1-	0	1	2	1	154.2*	158.2*	119	T	T
15	1-	2-	1+	1	1+	2-	2-	2-	0+	1+	1	0	0+	1	1+	1+	163.4	167.6	139	T	T
16	2-	1+	3-	2-	2	1	1-	1+	2-	1+	2	2-	1-	1-	0	0+	160.5	164.8	122	T	+
17	2-	2-	2+	1+	1-	3-	3	1+	2+	2-	2-	0+	0	2+	2+	1-	161.0	165.0	130	T	-
18	1+	1	1	1	3-	2+	2+	4+	1+	1	1-	1-	1+	1+	2+	4+	175.6	180.0	157	T	T
19	5	4+	4	5-	4	4-	3+	4	5	5-	5-	4+	3+	3	2+	3+	182.3	186.4	176	T	T
20	3	3-	4	3	3+	6	5+	4	4-	3-	4+	3-	3+	5+	5+	3	199.4*	204.2*	187	AT	T
21	5-	4-	3+	3+	3	3-	3+	3-	5-	4-	3+	3+	3-	2	3-	2	202.9*	207.6*	210	T	T
22	3-	3	3-	2+	3	3-	3-	2-	3-	3-	2+	2	2+	2-	2+	1+	218.2	223.2	216	T	T
23	1-	1-	2	1+	2	1-	2-	1+	1-	1	1	1-	1-	0	1-	1-	213.9	218.6	206	T	T
24	1-	1+	1-	2	2+	4-	4-	3-	0	1	1-	2-	2-	3+	3	2+	220.4	225.2	203	A	A
25	2-	3-	3	4-	3+	4-	4	4	2-	2	3-	4-	3+	3-	3+	3	224.4*	229.3*	201	AT	+
26	3+	3-	3+	3-	3-	2+	3+	1+	3	3-	3+	2	3-	1+	3-	1	218.7	223.3	182	A	A
27	2	3+	3	3	3-	3	3-	2-	2-	3-	3-	3	2-	2+	2	1	208.4	212.0	189	A	A
28	3-	2+	3-	3	2+	3-	1+	3-	2+	2	2	2	2-	2-	1-	2+	210.0	214.2	176	A	A
29	2+	4+	5-	5	5	6	5+	5	2	4	4+	5	5+	6	6	5+	193.7	197.6	150	T	T
30	4	3+	3-	2+	2-	2-	2-	1+	5-	4	3+	2	2-	0+	0+	1	184.3	187.0	150	A	-
31	1+	1	2+	3	3+	2+	3	3-	1+	1+	2-	3-	3+	2-	2	3-	176.5	179.9	160	A	A*
																Mean	172.7	177.0	143.5		

SEPTEMBER 1979

Day		Three-Hourly Indices Kp 1 2 3 4	Kp 5 6 7 8	Sum	Three-Hourly Indices Km 1 2 3 4	Km 5 6 7 8	Ap	aa N	aa S	aa M	Cp
1		[illegible] [illegible] 1- 1+	2- 2+ 4 3	10	2- 1- 1- 2-	1+ 2- 3+ 3-	10	19	13	5 25	0.5
2	Q2	2+ 1 1+ 1+	1 2- 1 2-	11+	2+ 1 1 1	1 2- 1 2-	5	11	11	10 12 C	0.2
3		3+ 2+ 2+ 2+	3- 1+ 2+ 1	16-	3 2 2+ 2	3- 1 2 1	9	17	15	16 15	0.5
4		1 2+ 3 3-	2+ 3- 3 2	19	0+ 2+ 3 2+	2+ 3- 3- 2	10	20	18	17 22	0.6
5		4- 3+ 3- 3	3+ 3+ 4- 3-	26-	3 3- 2 3-	3 3 4 3	17	33	26	22 38	0.9
6		4- 4+ 3+ 2+	3 3- 1- 2-	22-	3 4- 3+ 2+	3- 3- 1- 2-	15	29	28	31 19	0.8
7	Q3K	2 3 1+ 1-	1- 1- 1+ 1-	10+	2+ 3- 1 1-	1- 1- 1+ 1-	6	11	9	11 9 CK	0.2
8	Q4	1+ 1 3- 2	1+ 1 2 2-	13	1+ 1+ 3- 2+	1+ 1+ 2 2-	6	14	12	14 12 CC	0.3
9	Q1	2 1+ 2- 0+	1 1 1+ 2-	10+	2 2- 2- 0+	1- 1+ 1+ 2	5	13	10	10 13 CC	0.2
10		2+ 3- 1+ 2	2- 3- 2+ 2+	17+	2+ 3- 2- 2+	2 3- 3- 2+	9	15	19	17 10	0.5
11		2+ 2- 3- 4	3 4- 2+ 2+	22	2- 1+ 3- 4-	3 3+ 2 2	14	26	22	28 20	0.8
12	Q9A	3- 1 1- 1-	1+ 2 2+ 4-	14+	2+ 1 1- 0+	1+ 2- 2+ 3	8	18	8	8 18 C	0.4
13	Q8A	1 1 1- 1	2+ 1+ 1+ 2+	15	2+ 2+ 1 1	2 1+ 1 2	8	20	8	14 14	0.4
14		1+ 1+ 2 1+	0+ 2- 4+ 3+	16-	1+ 1+ 1+ 1+	0+ 1+ 3+ 3	10	20	11	9 23	0.6
15	Q8A	3- 2 1 2+	3- 2 2 2-	16+	3- 2- 1+ 2+	2+ 2- 1+ 2-	8	18	13	15 16	0.4
16		3+ 3 2+ 4-	3+ 2+ 2 3+	23+	3 2+ 2 3-	3 2 2- 3-	14	25	17	26 17	0.8
17		3- 2+ 2- 2+	2 3- 2- 4	19+	2 2 2- 2+	2 2+ 2- 4-	11	20	19	14 26	0.6
18	D1	6- 5- 7 6+	6- 6 4 2+	42-	5- 5- 6 6	6- 5+ 3+ 3-	64	66	97	101 63	1.7
19	Q5K	2- 1+ 1 1	1+ 1 3- 3-	13-	2- 1+ 1 1	1 1- 2 3-	6	11	11	9 13 C	0.3
20	D3	3+ 2- 2 3-	5 5 2+ 4	26	3- 1 2 2+	4+ 4+ 2+ 3+	22	35	34	18 51	1.1
21	D2	5 5+ 4- 2+	3- 2 3+ 3-	27	4+ 4+ 3- 2+	2+ 1+ 3- 3-	23	30	26	49 20	1.1
22	Q6	3- 2+ 1- 1	2+ 2- 1+ 1	13	3- 2- 0+ 1+	2+ 1+ 1 1+	6	12	13	12 14 C	0.3
23	Q7A	2- 2+ 2- 1-	2+ 3- 1+ 1	14-	2 2 1+ 1-	2 2+ 1+ 1-	7	9	15	11 13 C	0.3
24		1- 3+ 2+ 3+	4 3- 2+ 4	23-	1 3- 2 3	4- 3- 2+ 3+	15	29	25	20 34	0.9
25	D5*	4 4 3+ 1+	2 4 4- 3+	26-	3+ 3 3 1	1+ 4- 3+ 3+	19	29	26	26 29	1.0
26	D4*	4- 4- 3+ 3-	3+ 3+ 4 3+	27+	3+ 3 3 2+	3 3 4- 3	19	31	32	26 37	1.0
27		3+ 5- 2+ 2+	3- 3- 3- 2	23-	3- 4- 1+ 2	3- 2+ 3- 2	15	23	18	22 20	0.8
28		2+ 4 4 2+	2 3- 3+ 4-	24+	2 3+ 3 2+	2+ 3- 3 3+	16	23	30	23 30	0.9
29		4- 4- 3- 2-	4- 3 2+ 3-	23+	3+ 3 2 1+	3+ 3 2+ 3-	15	25	25	21 29	0.8
30		4- 4+ 4- 3-	3- 3+ 2 3	25+	3+ 3+ 3 2	2+ 3 2 3	18	26	19	26 20	1.0
						Mean	14	22.9	20.7	22.8	0.66

Day	Three-Hourly Indices Kn 1 2 3 4	Kn 5 6 7 8	Three-Hourly Indices Ks 1 2 3 4	Ks 5 6 7 8	S	Sa	Prov Rz	IMF
1	2- 0+ 1- 2	2- 2- 3+ 3	2 1+ 0+ 1+	1 1+ 1+ 2+	172.7	175.8	165	A A
2	2+ 1- 1 1+	1 2 1 2-	2+ 1+ 1- 1-	1+ 2- 1- 1+	176.9	180.1	141	A A
3	3 2- 2 2	3- 1+ 2+ 1+	3 2 3- 2	2+ 1- 2- 1	177.8	180.8	148	A A
4	0+ 2+ 3- 3-	3- 3 2+ 2+	1- 2+ 3 2+	2 2+ 3- 2	172.4*	175.3*	157	A A
5	3 3- 2+ 3-	3 3+ 4- 3-	3- 3 2 3-	3 3- 4+ 3	174.3	177.1	139	A A
6	3 4- 3- 3-	3 3- 1 2-	3 4- 4- 2+	2+ 2+ 1- 1+	177.6*	180.4*	139	A AT
7	2 2+ 1 1	1- 1- 1+ 1-	2+ 3- 1 0+	1- 1 1+ 1-	183.5	186.3	170	A A
8	1+ 1 3- 2+	1+ 2- 2+ 2-	1+ 2- 3- 2+	1+ 1- 2- 2-	180.9	183.6	192	A T
9	2- 1+ 1+ 1-	1 1+ 1+ 2+	2+ 2 2- 0	0+ 1+ 1+ 2-	184.8	187.4	190	T T
10	2 2+ 2- 2+	2 3- 3- 2	3- 3- 2- 2+	2 2+ 3- 2+	182.1	184.6	177	A A
11	2- 1+ 3- 4-	3 3+ 2+ 2	2 2- 3- 4-	3- 3 2- 2	179.2*	181.5*	167	A A
12	2 1- 1 1-	1+ 2 2+ 3+	3- 1+ 1- 0	1- 2- 2+ 3-	179.4	181.7	158	A A
13	2+ 2+ 1 1+	2+ 1+ 1+ 2+	2+ 2 1 1	2 1 1- 2	183.7	186.1	175	T -
14	1 1 2- 1+	0+ 2- 4- 3	2- 1+ 1+ 1+	0+ 1- 3+ 3+	190.1*	192.6*	186	T T
15	2+ 1+ 1 2+	2+ 2 2- 2-	3 2+ 1+ 2+	2 1+ 1 1+	191.7	193.8	177	T -
16	3- 2+ 2 3-	3 2+ 2- 2+	3+ 2+ 2 3-	3 2- 1+ 3	194.2*	196.3*	170	T T
17	2- 2 2 2+	2+ 3- 2 3+	2 2 2- 2+	2 2 1+ 4	200.7*	202.7*	155	T T+
18	5- 4 6 6	5+ 5 4- 3-	5- 5+ 6 6	6- 5+ 3 2+	213.8	215.7	177	A -
19	2- 1+ 1+ 1	1+ 1 2+ 3+	2 1+ 1 1	1- 0 2- 3-	216.2*	218.1*	195	AT T
20	2+ 1 2- 3-	5- 4+ 2+ 3+	3- 1+ 2 2+	4 4 2+ 3+	212.2*	213.9*	191	TA -
21	4 5- 3 2+	2+ 2- 3- 3+	5- 4 3- 3-	2+ 1+ 3- 3-	218.7	218.4	184	A A
22	2+ 2- 1- 1	3- 1+ 1 1+	3- 2- 0+ 1+	2 1+ 1 1+	215.8	216.5	170	TA AT
23	1+ 2- 2- 1-	2 2+ 1+ 1-	2+ 2+ 1+ 1-	2 2+ 1+ 1-	222.6*	224.2*	219	A A
24	1- 3- 2- 3	4 3- 2 3+	1+ 3- 2 3	3 3- 2+ 3	229.3	230.7	236	A A
25	3 3 3 1	1+ 4- 4- 3	4- 3 3 1	1+ 4- 3+ 4-	234.3	235.5	252	A A
26	3+ 3- 3 2+	3 3 4- 3	3+ 3 3 3-	3+ 3- 4- 3	228.8*	229.9*	261	A A
27	3- 4 1+ 2	3- 3- 3- 2+	3- 4- 2- 2	3- 2+ 2+ 2	227.0*	228.7*	256	A A
28	2 3+ 3 2+	2+ 3- 3 3+	2 3+ 3 2	2 3- 3- 3	232.9	233.8	239	A A
29	3+ 3- 2 1+	3+ 3 2+ 3-	3+ 3 2 1+	3+ 3- 2+ 3	224.3	225.8	235	A A+
30	3+ 3+ 3 2	3- 3 2 3	4- 4- 3 2+	2+ 3 2- 3	231.2	231.9	233	A A
				Mean	200.2	202.3	188.7	

OCTOBER 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M			Cp
		Three-Hourly Indices Kp									Three-Hourly Indices Km														
1		4-	3-	1+	2+	3	3-	1-	1	17+	3	2-	1+	3	3-	3-	1-	2-	10	13	24	27	15		0.6
2		0+	0+	0+	2-	2	2+	3-	3	13-	1-	0+	0+	2-	2-	3-	3	3	7	18	16	7	28		0.3
3		4	4-	2+	1	2	3+	3-	1+	20+	4-	3	2+	1	2-	3+	3-	2	13	26	19	24	22		0.7
4		3	2-	3+	4	0+	1-	0+	0	13+	3	2	3+	4-	1-	1	0+	0	9	14	21	33	2		0.5
5	Q7	0	0+	1-	1-	2+	2	3-	2+	11	0	1-	1	1-	2+	2+	2+	3-	6	16	11	5	23		0.3
6	D2	3+	4-	4-	5	6-	6	3	3-	33	3	3-	3+	4+	5	5	3-	3-	36	46	45	35	56		1.4
7	D3	4-	4+	4	3+	5	4+	5-	5-	34	3	4	4-	3	5-	4	4	4	32	42	52	41	53		1.3
8	D1	6-	4+	4+	5-	4	5-	4-	5-	36	5-	4-	3+	5-	4-	4	3	5-	37	42	42	41	43		1.4
9	D4	4+	4-	4+	5-	3	3	3+	3-	29	4-	3-	4-	4	3-	3	3+	2	23	34	37	44	24		1.1
10	D5*	4	4	3	3	3+	2	4-	2	25	3+	3	3-	3-	3+	2	3	2+	17	27	25	24	29		0.9
11		1-	1	3-	3-	3+	3	2	2-	17	0+	1	3-	3	3	3	2-	2-	10	13	18	14	18		0.5
12		1-	1+	1	2	2	2	3-	4-	15+	1-	1	1+	2+	2+	2	3-	4-	8	17	16	8	25		0.5
13		3	3-	3	3-	2-	2+	3	3	21+	2+	2+	3-	2	1+	3-	3	3	12	22	19	19	23		0.7
14	Q8	2+	1-	3-	2	1	2	1	1-	12+	2+	1-	3-	2	1+	2	1	1-	6	11	13	15	10	C	0.3
15		0+	0+	1	2	3	3	2+	2	14	1-	1-	1+	3-	3	3-	3-	2+	8	12	19	10	22		0.4
16		3	3-	2-	2	2+	1	1+	1	15	3-	2	1+	1+	2	1	2	1+	8	15	10	16	10	C	0.4
17	Q2	1	2-	1	1	1+	1-	1-	2-	9	1+	1+	1	1-	1+	1-	1-	2-	4	10	8	8	10	CC	0.2
18	Q1	1	1	1	0	0+	0	1-	1+	5+	1	1	1	0	0+	0	0+	1+	3	4	4	4	4	CC	0.0
19	Q3	1	0+	1-	1+	2+	2-	1	2-	10	1-	1	1	1	2	2-	1+	2	5	11	10	9	13	CC	0.2
20	Q10	3-	0+	2	2	1	2+	1+	2-	13+	2-	1-	2-	2	1+	2+	2-	2	6	13	9	11	11	CC	0.3
21		2-	3-	1+	2+	2	3-	2+	4-	19-	1+	2	1+	2-	2+	3	2+	4-	10	20	13	13	21		0.6
22		3+	3+	4-	3-	2	3+	2	2-	22	3	3-	3	2+	2	3+	2+	2+	14	27	19	26	21		0.8
23	Q9	1+	2	1+	2	2-	2-	2	2	14	1+	1+	1+	2	2	2+	2+	2+	6	14	12	11	15	C.	0.3
24		2	3	3	3+	3	3	2	1	20+	1+	3-	3-	3	3+	3-	2-	1	12	15	22	19	14		0.7
25		2	3	4+	2+	3-	2+	3	3-	22+	2-	2+	3+	2+	3-	2+	3-	3-	14	20	21	28	21		0.8
26		2-	3+	1+	2-	2	2-	2-	2+	16-	1+	2	1	2-	2+	2	2-	2	8	16	12	13	15		0.4
27	Q5	0+	2-	2+	2-	1-	2-	2	2-	12	0+	1+	2	1+	1+	2-	2+	1+	6	10	9	8	12	CC	0.3
28		2-	3-	2-	3-	3-	1+	1	3+	17	1+	2	2	3-	3	1+	2-	3	9	17	12	13	16		0.5
29		4-	3+	1+	2-	1+	2+	3-	2+	19-	3	3-	1-	1+	2-	2+	3-	3-	11	21	14	19	17		0.6
30	Q4	3-	2	1+	1+	1	0+	0+	0+	9+	2	1+	1+	2-	1	0+	0+	0+	5	9	10	14	9	CC	0.2
31	Q6	1-	0	1-	2	1+	2+	2	2+	11+	1+	0+	1	1+	2	2+	2	3-	5	12	16	7	21		0.2
																		Mean	12	16.9	18.7	19.8			0.56

Day	Kn 1	Kn 2	Kn 3	Kn 4	Kn 5	Kn 6	Kn 7	Kn 8	Ks 1	Ks 2	Ks 3	Ks 4	Ks 5	Ks 6	Ks 7	Ks 8	S	So	Prov Rz	IMF	
	Three-Hourly Indices Kn								Three-Hourly Indices Ks												
1	3	2-	3+	3	3-	3-	1-	1+	3	2-	1+	3	3-	3-	1-	2	212.4	212.6	213	T	-
2	0	0	0	1+	2	3	3	3+	1	1	1-	2-	2-	3-	3	3	211.3	211.5	187	T	-
3	4-	3	2	1	2	3+	3-	2-	3+	3	3-	1	2-	3+	3-	2+	204.5	204.7	167	A	A
4	3-	2-	3+	4-	1-	1+	0+	0	3	2+	3	3+	1-	1	0+	1+	197.7*	197.7*	156	T	TA
5	0	0+	1	1-	2+	2+	2	3-	0+	1-	1	1-	2	2+	2+	3-	192.3*	192.0*	160	T	A
6	3	3-	4-	4+	5-	5	3-	3	3	2+	3-	4+	5+	5+	3-	3-	195.7	195.5	160	T	A*
7	3	4	4-	3	5-	4	4-	4-	3+	4+	4	3	5	4	4	4+	197.[illegible]	197.[illegible]	175	A	A
8	5-	4-	4-	5-	4	4+	3+	4	5	4-	3+	5	3+	4	3-	5-	[illegible]	206.3	196	A	A
9	3+	3-	4-	4+	3	3	3	3	4-	3	3+	4-	2+	3	3+	3	210.1	209.5	[illegible]	A	A
10	3+	3+	3-	3-	4-	2	3+	2+	3+	3-	3-	2+	3+	2-	3	2+	239.3	238.7	178	TA	A
11	0+	1-	2+	3-	3	3	2-	1+	0+	1+	3-	3	3	3+	2	2-	212.7	211.8	183	A	A
12	1-	1	1	2+	2+	2-	3-	4-	1	1	1+	2+	2+	2	3-	4-	217.1	216.4	189	A	-
13	2+	2+	2+	2	1+	3-	3	3-	2+	2+	3-	2	1+	3-	3-	3+	240.3	239.1	211	T	T
14	2+	1-	2+	2	1	2+	1	0+	2+	1	3-	2	1+	2	1	1-	237.5	236.4	213	T	T
15	1-	1-	1	3-	3+	3-	3-	2+	1	1	1+	2+	3-	2+	3-	2+	232.1	230.7	190	TA	A
16	2+	2+	2-	1+	2	1	2	1+	3-	2	1+	1+	2+	1-	2-	2-	233.9	232.3	185	T	T
17	1	1	1	1-	1+	1-	1-	2-	1+	2-	1+	1-	1+	1-	1-	2-	227.5	226.0	221	T	T
18	1+	1-	1	0	0	0	0+	1+	1	1+	1+	0+	0+	0	0+	1+	238.7	236.8	224	TA	T
19	1-	1	1	1	2	2	1+	2-	1-	1	1	1+	2	2-	1	2+	239.2*	237.3*	221	TA	-
20	2	0+	2-	2	1+	2+	2-	2-	2-	1	2-	2	1+	2+	2-	2	238.9*	236.7*	219	A	-
21	1+	2	1+	2-	3-	3	2+	4-	2-	2	1	2	2	3	2+	4-	232.2	230.1	215	A	A
22	3	3-	3	2+	2	3+	2	2+	3-	3-	3-	2+	2+	3+	3-	3-	224.1	221.9	190	A	A
23	1+	1+	1+	2	2-	2+	2+	2	1+	2-	1+	2	2+	2+	2+	2+	217.1*	214.9*	186	A	A
24	1+	3-	3-	3-	3+	3-	2-	1-	1+	3-	2+	3	3	3-	2	1+	228.1*	225.6*	16[illegible]	A	A
25	1+	2	3+	2+	2+	3-	3	3-	2-	2+	3	3-	3-	2+	3-	3-	217.3	215.2	153	A	A
26	2-	2+	1+	2-	3-	2	2-	2+	1+	2	1-	2-	2	2+	2	2	205.4	202.5	145	T	A
27	0	1+	2+	1+	1+	2-	2+	1+	1-	1+	2-	1+	1+	2	2+	1+	214.3	211.2	143	A	A
28	1+	2	2+	3-	3	1+	1	3	2-	2-	1+	3-	3-	2-	2	3-	212.8	210.0	142	A	T*
29	3	3-	1-	1+	2-	2+	3-	3-	3+	3-	1-	1+	2-	2	2+	3-	217.4	214.8	191	A	A
30	2	1+	1+	1+	1+	1-	0	0	2+	1+	1+	2	1	0+	0+	1-	216.7*	213.7*	197	A	A
31	0+	0	1-	1+	2	2	2	2+	0+	1-	1+	1+	2+	3-	2	3-	218.2*	214.9*	223	TA	A
																Mean	217.4	216.4	186.2		

NOVEMBER 1979

Day		Three-Hourly Indices Kp 1	2	3	4	5	6	7	8	Sum	Three-Hourly Indices Km 1	2	3	4	5	6	7	8	Ap	aa N	S	M			Cp
1	D5*	3	3	2+	3	3	3+	4-	3	24+	2	2+	2	3-	3-	3+	3+	3-	16	30	22	23	25		0.9
2		3+	4-	3-	3-	3	2+	2-	1	20+	3-	3-	2	3-	3	3-	2	1+	12	19	21	24	17		0.7
3		1-	0+	1	3-	2+	3+	3+	3+	17	1-	0+	1-	2	2	3	3+	3	10	22	20	9	33		0.6
4		3+	3	2+	3-	2	2-	2	1	18	3-	2+	2	2+	2	1+	3-	1+	10	17	17	23	12		0.5
5	Q2	0+	0	0+	1-	1	1-	1	0+	4+	1-	0+	1-	1	1-	1-	1	1-	2	3	6	4	5	CC	0.0
6	Q4	1-	1	1-	1+	1	0+	0+	0+	6-	1	1+	1	1+	1-	0	0	0+	3	4	10	12	2	CC	0.1
7		1	2	2-	2+	2+	4-	4	2+	19+	1+	2-	2-	3-	3-	4-	4-	3-	12	19	30	16	34		0.7
8	D4*	3-	2	5-	4-	3	2+	2-	2-	22-	2	2-	4-	4	3	2+	2-	2+	14	17	35	33	19		0.8
9	D3*	2+	2+	3-	1+	4	5-	4+	3+	25	2+	3-	2+	1+	4	5-	4-	3+	19	33	44	21	56		1.0
10		1+	2	2-	1+	1+	1+	2-	3-	13+	1-	2-	1+	1	1-	1+	2	3	6	12	13	12	13	C	0.3
11		3	3+	2-	2	2	3	2	2-	19-	3+	3-	2	2	2-	3+	3-	2	10	17	26	25	19		0.6
12		1	1+	2+	2+	2+	2+	2	2-	15+	1+	2-	2+	2	2+	3-	2	2	7	13	19	15	10		0.4
13	D1	4	5-	4-	4+	4	5	5+	4+	35+	3+	3+	3+	4	4-	5-	5-	4	35	57	47	34	70		1.4
14		5	4+	3-	1	1-	1	0+	0	15	4+	3+	2	1+	1-	1+	0	0	13	14	10	20	5	K	0.0
15	Q5	0	1	1-	1+	1+	1-	0+	1	6+	0+	2-	1-	1	1	1	0+	1+	3	4	7	6	6	CK	0.1
16		2+	3+	4-	2	2	3-	3-	2	21-	3	3	3	2	2	3	3-	2+	12	20	32	31	21		0.7
17		3+	2+	3-	2	1	1-	2	1	15	2+	3-	3-	2+	1	1-	3-	2-	8	12	21	24	9		0.4
18	Q9	3-	1-	1	1+	1	1	0+	0+	8+	3	1+	1	1+	1	1	0+	1-	4	7	13	16	4	KK	0.2
19		0+	1-	1+	2	2	2	2	3	13+	0	1	1-	2-	2+	2	2	3	7	15	17	8	24	K	0.3
20		2	1+	2+	3-	3	3+	2-	1+	18-	2+	1+	2+	3	3-	3+	2-	1+	10	14	20	16	19		0.5
21		3-	2	2	1	1	1+	2-	0+	12	2-	1+	2-	1	1	1+	2-	0+	6	10	10	12	8	CK	0.3
22	Q3	0	0	1+	1+	1-	1-	0+	0	4+	0+	1-	1	2-	1-	1-	0	0	2	2	8	7	3	CC	0.0
23	Q6	0+	0	0+	2-	1	1	2-	2	8	0+	0	0+	1	1+	1+	2-	2+	4	8	8	6	11	CK	0.1
24	D2	3	4-	4	4	4-	4-	4	4	30	3-	3-	3	4-	4	4-	4	4-	24	30	39	30	40		1.1
25		4+	5	2+	2	2-	1	1+	2-	19+	4-	4-	2	1+	2-	1+	2	2-	15	21	13	26	9		0.8
26	Q7	1	0	0	0+	1+	1+	2+	2-	8	1+	0	0+	0+	1+	2-	3-	2	4	11	7	4	14	CC	0.1
27	Q8	2	1	2+	1-	1	1-	1-	0+	9-	2-	1+	2	1-	1+	1-	1-	0+	4	4	7	8	3	CC	0.2
28	Q1	0+	0	1	0	0+	0+	1-	0+	3	0	0	1-	0	1-	1-	1	1+	2	2	3	2	3	CC	0.0
29	Q0	0+	0	1-	1-	1-	2+	2+	1	8	0+	0+	1	1	1	3-	3-	2-	4	6	12	5	14	C	0.1
30		1	2-	5	3+	3+	3-	2	2	21	1+	2-	5-	4-	3	3-	2-	2-	15	22	30	34	19		0.0
																		Mean	10	15.0	10.9	17.6			0.40

Day	Three-Hourly Indices Kn 1	2	3	4	5	6	7	8	Three-Hourly Indices Ks 1	2	3	4	5	6	7	8	S	So	Prov Rz	IMF	
1	2+	2	2	3-	3-	3	3	3-	2	3-	2	3	3-	3+	4-	3	214.0	211.6	224	A	-
2	3-	3	2	3-	3	3-	2	1	2+	3-	2+	2+	3	3	2	2-	212.9	209.5	157	A	A
3	1-	0	1-	2-	2	3	3+	3	1	1-	0+	2+	2	3-	3	3	210.9	207.5	155	T	-
4	3-	2	2-	3-	2	1+	2	1	3-	2+	2+	2+	2	1+	3-	2-	217.9	214.2	172	T	A
5	0+	0	1-	1-	1-	1-	1	0+	1	0+	1	1+	1-	1-	1	1+	239.6	235.5	166	A	A
6	1-	1+	0+	1+	0+	0	0	0	1+	2-	2-	1+	1	0	0	0+	278.2*	273.2*	210	A	T
7	1	1+	1+	2+	2+	4-	3+	3-	2-	2+	2	3	3	3+	4-	3-	292.2*	286.9*	254	A	A
8	2	1+	4-	4	3	3-	1+	2-	2	2	4-	4+	3	2	2	3-	316.1	310.1	280	AT	T
9	2-	2-	2	1+	4	5-	4-	3	3-	3	3-	1+	4+	5-	4	4-	320.5*	314.4*	279	AT	*
10	0+	1+	1	1	1-	1+	2-	2+	1	2+	2-	1	1	2-	2+	3+	374.5*	367.0*	302	T	T
11	3-	2+	1+	2-	2-	3	2+	1+	4-	3	2+	2+	2	4-	3-	3-	332.3*	325.7*	295	AT	T
12	1-	1+	2+	2	2+	2+	2	2-	2-	2	2+	2	2+	3-	2+	2+	300.7	294.4	240	A	A
13	3+	4-	3	4-	4-	4+	5-	4-	3+	3+	3+	4	4	5-	5-	4	278.5	272.7	183	A	A
14	4	3+	2	1	0+	1	0+	0	5-	4-	2+	1+	1	1+	0	0	261.9	256.4	210	T	T
15	0	1	0+	1	1-	1	0+	1	1-	2	1	1	1	1	1-	1+	245.1*	239.7*	186	T	T
16	3-	3	3-	2-	2-	3+	3-	2	4-	3+	3+	2+	2	3	3	2+	235.0	230.6	166	A	A
17	3-	2	2+	2	1-	1-	2+	1+	2-	3	3	3-	1+	1	3	2	237.3	231.6	253	A	-
18	2+	1-	1-	1+	1	1-	0+	0+	3+	2-	1+	1+	1	1+	1-	1	237.4	231.9	172	TA	-
19	0	1-	1	2-	2+	2	2-	3-	0	1+	1-	2-	2+	2-	2	3+	220.1	214.0	174	T	A
20	2-	1	2+	3-	3	3+	2-	1+	3-	2-	2+	3	3-	3	[illegible]	1+	211.0	205.9	153	A	A
21	2	1+	2	1	1	1+	2-	0+	2-	1+	1+	1	1+	1+	2-	1-	194.5	189.6	131	AT	A
22	0	0+	1-	2-	1-	0+	0	0	1	1	1+	2-	1	1-	0	0+	187.2	182.5	123	A	A
23	0	0	0	1	1+	1+	2-	2	1-	0+	0+	1	1+	1+	2	2+	187.9	183.2	142	A	A
24	3-	3-	3	4	4	4-	4	3+	2+	3	3	3+	4	4-	4-	4-	179.9*	175.2*	162	A	A
25	4-	3+	2-	1+	1+	1+	2-	1+	4-	4-	2+	1+	2+	1+	2+	2-	170.2*	165.0*	155	T	T
26	1	0	0+	0+	1	1+	3-	2-	2-	0	0+	0	1+	2	3	2+	165.9	161.6	141	T	*
27	2-	1+	2+	1-	1+	1-	0+	0+	2	1+	2	1-	1+	1	1	1-	160.0	155.7	115	A	A
28	0	0	1	0	0+	1-	1	1-	0	0	0+	0+	1-	1-	1	2-	154.3	150.1	119	A	A
29	0	0	1-	1-	1	3-	2+	1	1-	0+	1+	1+	1+	3-	3-	2+	158.3	154.0	98	T	A
30	1-	1+	5-	3	3	3-	1+	2-	2-	2	5-	4	3+	2+	2-	2	156.6	152.2	116	AT	T
																Mean	231.7	226.0	185.0		

DECEMBER 1979

Day		Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Sum	Km 1	Km 2	Km 3	Km 4	Km 5	Km 6	Km 7	Km 8	Ap	aa N	aa S	aa M	Cp
1		2-	1	3-	3-	2+	3-	2+	2	17+	1+	1+	2+	2+	2	3	3-	3-	9	16	14	11 20	0.5
2		3+	3	3-	3	2+	2-	2-	1+	19	3-	2	3-	3	3-	2	2-	2-	11	16	16	22 11	0.6
3		2+	3+	3+	2+	2-	1	1	0+	15+	2-	2+	3-	2+	2	1+	1	1	9	13	15	21 [illegible]	0.5
4	D3*	2	3+	4	3	3+	4	3-	2	24+	2-	3-	3	3	3	4+	3-	4	16	27	22	44 26	0.9
5		2	1+	2+	2	2+	2+	1	2-	15	2-	1	2+	2-	2+	2	2-	2+	7	11	13	11 13 C	0.4
6		2+	2	2+	2-	1-	0+	1	1	11+	2+	2-	2+	2-	0+	0	2-	1+	6	7	11	14 5 CC	0.2
7	Q4	1+	1	1-	1	1-	1-	2-	1+	8+	1	1	0+	1-	1-	1-	2-	2-	4	4	7	5 5 CC	0.1
8		1+	3-	2	2	3	2+	3-	2+	18+	1+	2+	2+	3-	3+	3	3+	3-	10	19	26	18 27	0.5
9		2	2	2	2+	2	1+	2-	2-	15	2	1+	2-	2	2+	2	2-	2-	7	10	15	15 11 C	0.3
10	Q10	1	1+	1	1	1+	3-	2-	1-	11-	1+	1+	1	1	2-	3-	2+	1+	5	9	12	7 14 KC	0.2
11	Q9	2+	1+	1-	1-	1-	1-	2+	1+	10	2-	1+	0+	1-	1-	1+	3-	2-	5	7	10	9 8 CK	0.2
12	Q5	1-	1-	0+	1	1	1+	2-	2-	8+	1	1	1-	1+	1+	2	2-	1+	4	8	7	6 10 CC	0.1
13	Q2	0+	1-	1+	1-	1+	1-	1	1	7	1-	1	1	1	1+	1	1	1	4	5	7	7 5 CC	0.1
14	Q6	0+	2-	1	1	1	1+	2-	1+	9+	1	1+	1+	1	1+	2-	2+	2-	4	8	10	8 11 CC	0.2
15		1	3	2-	3-	2	2+	3-	2-	17	1+	3-	2+	3+	2+	3-	3-	3-	9	15	10	17 17	0.5
16		3-	3	2+	2-	2	2	2	3+	19	2+	2+	2+	2	2+	2+	3-	3-	10	24	19	21 23	0.6
17		4-	2+	3	2	3-	3	2+	3-	22-	3-	2+	3-	2+	3	3	3-	3-	13	24	21	22 24	0.7
18		3-	1	1+	2+	2	2-	2-	2-	14+	2+	1+	1+	2+	2+	2-	2-	2-	7	11	15	13 14 C	0.3
19		2-	2	2-	1+	1	1+	2-	2+	13	1+	1+	2-	1+	1	1	2	2+	6	10	13	9 14 CC	0.3
20	Q8	0	1+	1-	1	2	2-	1+	1	9	0+	1+	2-	1+	3-	2	2-	1+	4	6	15	7 15 CC	0.1
21	Q7	0+	0	0+	1-	1-	1+	2+	2	8-	0+	0	0+	1-	1+	2-	3-	2+	4	6	14	7 13 C	0.1
22	D5*	2+	3	2+	4	3	3+	4-	1+	23	2-	2+	2	4	3	3+	3+	2	15	27	25	24 28	0.8
23	Q3	1-	0+	1-	1-	0	1	1	2	6+	1+	1-	1	1-	0+	1+	1+	3-	3	4	11	6 9 C	0.1
24		2+	2-	1+	2+	1	3-	1	1+	14-	3-	2	2-	2	2-	4-	1+	1+	7	13	21	15 19 K	0.3
25	Q1	0	0	0	0	1+	0+	1	1+	4	0	0	0+	0+	2-	1-	2+	2+	2	6	12	6 12 CK	0.0
26		2	1+	1	2-	2	3+	4-	3-	18-	2	1+	2-	2+	2+	4-	3+	3	10	23	22	13 32	0.6
27		1+	3	3	3	3	3+	2-	1	19+	2-	3+	3	3	3+	3+	2-	2-	12	15	31	26 28	0.7
28	D4*	1	3-	2-	4+	4	3+	2-	4	23-	1+	2+	1+	4-	4	4-	2-	4-	16	35	35	26 44	0.9
29	D1	4	5	4	4-	4	4-	5	4+	34-	3+	4-	3	4-	4	4-	5-	4-	32	48	56	46 50	1.3
30	D2	5-	4+	3+	3+	3-	3	3+	3-	27+	4-	3	3-	3+	3+	3+	3+	3	20	34	36	37 32	1.0
31		2+	2+	1+	1	1+	2-	2+	4-	16	3-	3-	2-	1	2-	2+	3	4-	9	15	34	19 30	0.5
																		Mean	9	15.4	18.0	17.3	0.44

Day	Kn 1	Kn 2	Kn 3	Kn 4	Kn 5	Kn 6	Kn 7	Kn 8	Ks 1	Ks 2	Ks 3	Ks 4	Ks 5	Ks 6	Ks 7	Ks 8	S	Sa	Prov Rz	IMF	
1	1+	1+	3-	3-	2+	3	3-	2+	2-	1+	2-	2-	2-	3	3-	3-	166.6	161.9	122	A	A
2	3	2+	2+	3-	2+	2	2	1+	2+	2-	3-	3	3-	2	1+	2-	177.0*	172.0*	156	A	A
3	2-	3-	3-	3-	2-	1+	1	0+	1+	2+	3	2+	2+	1+	1+	1+	200.9*	195.1*	187	A	A
4	2-	3	3+	3+	3+	4-	3	2	2	3-	3-	3	3-	5-	2+	2	227.6	221.0	218	AT	-
5	1+	1-	2+	2-	2+	2	1	2-	2-	1	2	2	2+	2	2	3	230.1*	223.4*	232	TA	A
6	2	2-	2+	2-	0+	0	1	1+	3+	2-	2+	2-	0+	0	2+	1+	230.1	223.4	206	A	-
7	1-	0+	0	1	0+	1-	1	1	1+	1+	1-	1-	1	1-	2+	2+	229.5	222.6	214	T	T
8	1-	2+	2	2	3	3	3-	2	2-	2+	3-	3	4-	3	4-	3	236.0*	228.9*	272	TA	T
9	1+	1	1+	1+	2	2-	1+	1+	2+	1+	2	2+	2+	2+	2-	2	239.6	232.4	293	T	T
10	1	1	1-	1	2-	3-	2-	1	2-	2-	1	1+	2	3	3-	2-	237.4	230.3	206	T	-
11	2-	1	0+	0+	0+	1+	3-	1+	2-	2-	1-	1-	1-	2-	3-	2	238.0*	230.6*	279	T	-
12	1-	1-	0+	1-	1	1+	1+	1	1+	1+	1	1+	2-	2+	2	2-	239.7	232.3	272	T	A
13	0+	1-	1-	0+	1+	1	1+	1-	1-	1	1+	1+	1+	1	1	1+	239.1	231.7	235	T	A
14	1-	1	1	1-	1	2-	2	1+	1+	1+	1+	1	1+	2	3-	2	245.9	238.3	230	A	A
15	1-	2	2	3+	2	3-	2+	2-	2-	3	2+	3+	2+	3	3-	3	239.2	231.8	225	A	A
16	2	2	2	2	3-	3-	2	3-	2+	3-	2+	2	2+	2+	3	3-	223.5	216.3	220	A	A
17	3	2	2+	2	3-	3-	2+	2+	2	2+	3	2+	3+	3+	3-	3	208.9	202.2	180	A	-
18	2	1-	1	2+	2+	2-	2-	1+	2+	1+	1+	3-	3-	2	2-	2+	193.6	187.4	151	A	A
19	1	1+	1+	1+	1-	2-	2-	3-	2-	1+	2	1+	1+	2+	2+	2+	189.1	183.0	138	A	A
20	0	1	1	1+	3-	2-	1+	1+	1-	2	2	1+	3-	2+	2-	2-	186.0*	180.0*	126	A	A
21	0	0	0+	1-	1+	2-	2+	2	1-	0	0+	1	1+	2-	3-	2+	182.5*	176.7*	131	TA	A
22	2-	2	2	4-	3	3+	4	2-	2-	3-	2+	4+	3	3+	3	2+	181.1	175.3	140	A	A
23	1-	0+	1-	0+	0	1+	1+	2-	2-		1	1	1-	1+	1+	3	174.4	168.6	132	TA	T
24	2+	2-	1+	2+	1+	4	1+	1	3	2	2-	2-	2-	3+	2-	1+	165.7	160.2	130	A	-
25	0	0	0	0	1+	0	2-	2-	0+	0	1	1-	2-	1	2+	3-	167.5	162.0	161	A	-
26	2	1	1	2-	2+	4-	3+	3-	2+	1+	2+	2+	3-	4-	4-	3	165.2	159.7	127	AT	-
27	1	3	3	3-	3	4-	2	1+	2	4	3	3+	3+	3	1+	2-	158.0*	153.6*	93	A	T
28	1-	2-	1+	4	4	4-	2-	4-	2	3-	2-	4-	4-	4-	2-	4-	168.7	163.1	98	T	T
29	3+	4-	3-	3+	4-	4-	5-	4	3+	4-	3+	4	4	4-	5-	4-	179.9	174.0	121	A	A
30	4-	3+	3-	3+	3	3	3+	3-	4-	3-	3-	3+	3+	4-	4-	3	191.0	185.5	139	AT	A
31	2-	2	1+	1	1+	2	3-	3+	3	3	2	1+	2+	2+	3+	4	195.3	188.9	135	A	A
																Mean	203.5	197.2	182.3		

NASA/GODDARD SPACE FLIGHT CENTER

Appendix 1

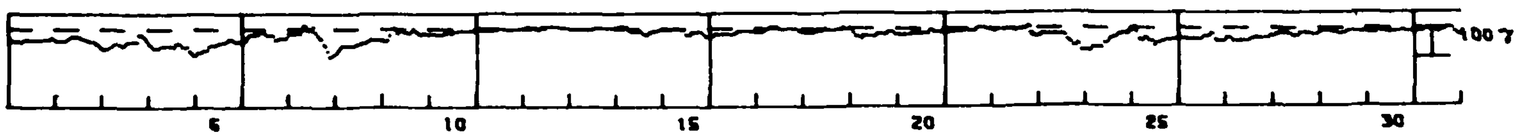
HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JANUARY 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-48	-46	-49	-48	-48	-48	-42	-37	-38	-39	-38	-39	-40	-39	-38	-37	-36	-35	-36	-36	-34	-29	-38	-43
2	-42	-42	-41	-40	-39	-35	-31	-26	-25	-25	-25	-29	-36	-39	-38	-42	-45	-47	-42	-44	-53	[illegible]	-64	-70
3	-57	-63	-65	-59	-55	-49	-49	-51	-54	-60	-57	-48	-42	-44	-44	-39	-39	-40	-19	-15	-27	-35	-42	-83
4	-59	-65	-69	-68	-63	-57	-59	-60	-53	-56	-58	-60	-64	-49	-47	-50	-60	-63	-60	-60	-73	-84	-90	-91
5	-79	-75	-76	-70	-72	-69	-60	-53	-57	-54	-49	-45	-43	-43	-42	-39	-34	-39	-40	-45	-41	-40	-45	-47
6	-46	-36	-27	-20	-17	-19	-19	-17	-12	-11	-14	-22	-26	-24	-25	-28	-39	-35	-31	-33	-32	-32	-28	-18
7	-14	-16	-17	-16	-18	-14	-6	9	4	-8	-12	-5	6	-14	-26	-35	-33	-54	-60	-75	-94	-88	-84	-81
8	-74	-66	-58	-54	-55	-54	-55	-54	-54	-53	-49	-52	-47	-45	-43	-41	-38	-34	-38	-41	-41	-40	-34	-36
9	-44	-40	-36	-22	-2	2	-4	-16	-10	-6	-11	-18	-16	-17	-10	-2	-10	-15	-22	-20	-14	-16	-24	-19
10	-17	-20	-22	-25	-26	-22	-17	-15	-13	-15	-14	-13	-10	-9	-7	-6	-6	-7	-6	-10	-12	-11	-10	-7
11	-6	-6	-6	-6	-8	-10	-9	-7	-5	-5	-5	-2	-1	-3	-2	-3	-4	-2	-1	-1	-1	-1	1	2
12	2	5	0	-3	-1	3	1	-8	-3	4	7	7	5	5	1	2	2	2	-3	-3	-3	-3	-4	-8
13	-8	-5	-6	-8	-9	-9	-8	-6	-5	-5	-5	-3	1	3	3	1	0	1	1	0	2	2	0	1
14	4	7	7	7	4	-1	-8	-14	-14	-10	-9	-9	-14	-21	-26	-25	-16	-12	-10	-8	-7	-6	-3	-4
15	-6	-9	-9	-6	-5	-1	1	-2	-10	-11	-12	-23	-28	-21	-14	-15	-12	-12	-10	-17	-22	-30	-29	-27
16	-28	-24	-19	-20	-24	-22	-18	-17	-21	-25	-23	-21	-16	-13	-9	-9	-9	-8	-8	-13	-16	-12	-10	-17
17	-16	-14	-12	-10	-5	-2	2	6	4	2	-1	-7	-10	-5	-2	-2	0	-7	-8	-4	-8	-12	-16	-16
18	-19	-19	-15	-13	-14	-9	-5	-7	-6	-5	-4	-8	-7	-12	-4	-5	-4	-1	-3	-12	1	-9	-6	-6
19	-6	-18	-30	-33	-34	-38	-26	-25	-26	-26	-27	-32	-23	-18	-19	-23	-25	-21	-14	-11	-14	-17	-23	-23
20	-25	-21	-18	-19	-20	-22	-17	-14	-18	-20	-20	-19	-14	-13	-15	-15	-6	-11	-15	-16	-17	-15	-13	-12
21	-11	-9	-10	-14	-15	-12	-7	-8	-10	-11	-4	-9	-13	-6	-7	-3	2	-2	1	-3	-6	-7	-9	-6
22	-5	0	-1	-2	-4	-4	-4	-2	-3	-6	-8	-5	-4	-8	-8	-3	-3	1	6	-2	-18	-29	-29	-30
23	-25	-18	-21	-25	-25	-22	-21	-22	-21	-23	-22	-19	-26	-28	-40	-48	-51	-61	-59	-52	-57	-77	-76	-70
24	-79	-74	-70	-63	-64	-67	-65	-64	-61	-51	-48	-45	-37	-31	-28	-27	-23	-18	-21	-14	-22	-22	-11	-7
25	-6	3	-15	-41	-45	-40	-32	-38	-45	-41	-45	-58	-48	-45	-43	-40	-41	-37	-43	-42	-41	-39	-36	-34
26	-38	-40	-34	-34	-37	-39	-38	-35	-40	-39	-41	-37	-29	-26	-27	-25	-18	-21	-39	-48	-40	-48	-48	-39
27	-33	-31	-38	-45	-44	-43	-44	-43	-45	-46	-42	-39	-36	-34	-31	-32	-31	-38	-37	-32	-37	-37	-26	-24
28	-28	-21	-19	-16	-17	-15	-19	-22	-25	-30	-26	-29	-24	-16	-14	-16	-14	-14	-21	-25	-24	-24	-17	-13
29	-9	-8	-11	-12	-15	-17	-17	-18	-22	-20	-17	-19	-14	-10	-10	-7	-12	-16	-14	-12	-12	-11	-13	-14
30	-20	-16	-16	-13	-11	-8	-10	-10	-11	-17	-18	-14	-11	-10	-9	-11	-9	-6	-11	-16	-12	-12	-13	-12
31	-11	-11	-11	-12	-8	-3	-8	-11	-11	-12	-14	-18	-13	-8	-7	-6	0	1	-4	-6	-15	-21	-27	-30

JAN



Appendix 1

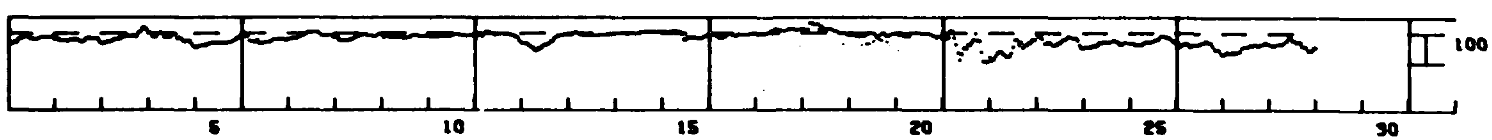
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

FEBRUARY 1979

UNIT=GAMMAS G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-36	-34	-29	-29	-21	-15	-14	-13	-9	-15	-19	-20	-22	-20	-19	-14	-12	-12	-13	-12	-12	-12	-13	-20
2	-22	-22	-26	-27	-24	-24	-24	-20	-20	-21	-20	-23	-29	-31	-26	-18	-15	-17	-20	-17	-16	-20	-29	-36
3	-35	-30	-28	-26	-26	-22	-19	-18	-18	-15	-10	-9	-8	-10	-9	-11	-13	-12	2	6	16	15	9	0
4	-3	-13	-17	-12	-4	1	-6	-14	-14	-15	-13	-9	-3	-5	-20	-14	-22	-29	-26	-25	-26	-36	-44	-49
5	-47	-42	-40	-38	-38	-38	-34	-32	-31	-30	-35	-32	-34	-35	-34	-30	-29	-29	-27	-23	-20	-14	-14	-10
6	-8	-10	-13	-27	-31	-31	-29	-22	-33	-37	-33	-29	-30	-28	-27	-21	-19	-21	-20	-19	-20	-25	-25	-19
7	-17	-16	-16	-15	-14	-10	-8	-6	-3	3	4	2	0	1	-1	-5	-10	-10	-11	-8	-4	-8	-15	-13
8	-15	-24	-27	-23	-22	-23	-24	-20	-18	-14	-10	-8	-7	-4	-3	-5	-11	-12	-12	-13	-9	-4	-2	-9
9	-16	-10	-10	-16	-17	-16	-16	-13	-12	-18	-17	-15	-17	-14	-10	-7	-9	-10	-13	-13	-10	-10	-12	-14
10	-14	-16	-15	-13	-12	-10	-10	-10	-10	-12	-10	-8	-5	-5	-6	-10	-11	-10	-8	-5	-6	-5	-8	-11
11	-8	-3	2	-12	-2	6	1	-2	-3	-7	-6	-1	-1	-2	-1	-2	-4	-7	-9	-10	-13	-16	-26	-34
12	-36	-37	-37	-42	-48	-51	-58	-54	-48	-49	-40	-37	-37	-34	-28	-25	-16	-11	-7	-6	-4	-4	-4	-4
13	-4	-3	2	3	-3	-8	-8	-9	-10	-9	-7	-7	-10	-10	-9	-7	-5	-5	-4	-5	-4	-1	-1	1
14	0	2	2	3	1	1	2	1	-2	-3	-3	1	5	5	6	6	6	5	4	5	4	4	6	3
15	6	4	1	4	8	6	4	2	1	-5	-24	-23	-14	-15	-15	-17	-16	-18	-20	-16	-12	-9	-6	-6
16	-7	-7	-5	-11	-16	-16	-15	-10	-6	-2	-3	-10	-12	-9	-4	-4	-6	-7	-6	-4	-2	0	-3	-6
17	-5	-3	-2	-1	0	2	6	9	11	13	10	7	7	6	6	9	13	13	13	10	7	10	13	14
18	9	11	12	33	30	25	29	26	9	20	12	8	13	10	9	5	3	1	-3	0	-2	0	-7	-11
19	-11	-9	-9	-13	-10	-9	-8	-8	-3	-1	-1	-3	-2	-12	-18	-6	0	-3	-11	-9	-7	-3	-3	-6
20	-8	-11	-11	-9	-10	-13	-9	-1	2	2	1	-2	-4	-5	-3	-5	-5	-7	-11	-13	-17	-12	-10	-18
21	-20	-17	-14	7	4	-18	-40	-66	-90	-68	-49	-53	-38	-37	-30	-22	-1	-28	-27	-64	-93	-98	-92	-78
22	-90	-86	-76	-65	-62	-62	-70	-76	-81	-76	-67	-45	-22	-25	-41	-32	-52	-40	-42	-33	-33	-23	-25	-8
23	-14	-7	-22	-39	-36	-31	-32	-40	-43	-37	-32	-31	-23	-19	-18	-12	-15	-19	-18	-15	-25	-41	-50	-47
24	-46	-45	-45	-44	-40	-41	-40	-33	-31	-30	-30	-32	-33	-27	-25	-26	-30	-33	-38	-38	-31	-30	-34	-37
25	-34	-35	-40	-39	-39	-41	-34	-29	-33	-31	-28	-26	-22	-22	-18	-11	-10	-13	-16	-14	-21	-27	-32	-32
26	-35	-43	-39	-34	-35	-38	-45	-41	-37	-37	-37	-35	-32	-31	-27	-26	-34	-33	-43	-55	-57	-57	-66	-72
27	-66	-61	-66	-66	-61	-67	-61	-64	-58	-47	-43	-45	-42	-38	-38	-39	-35	-41	-41	-36	-34	-30	-37	-36
28	-41	-40	-41	-35	-34	-35	-34	-28	-24	-13	-12	-25	-25	-33	-28	-31	-41	-46	-48	-57	-59	-56	-47	-48

FEB


NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EGUATCRIAL DST VALUES(PROVISIONAL)

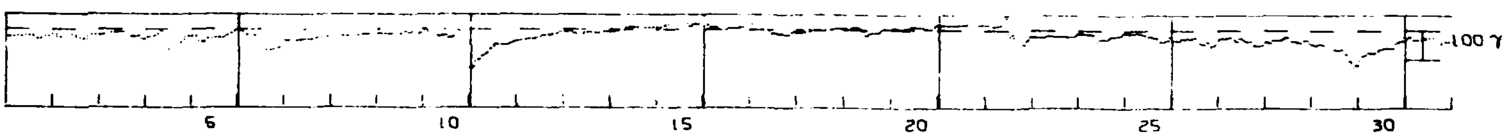
MARCH 1979

UNIT=GAMMAS

G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-31	-27	-30	-24	-25	-22	-23	-28	-28	-20	-18	-22	-26	-26	-29	-34	-37	-36	-27	-25	-22	-23	-21	-16
2	-18	-22	-29	-29	-33	-32	-33	-23	-22	-17	-19	-25	-32	-34	-35	-36	-37	-30	-23	-17	-24	-23	-18	-18
3	-22	-21	-16	-12	-12	-11	-12	-13	-10	-9	-10	-10	-11	-20	-28	-30	-29	-25	-26	-22	-27	-35	-37	-32
4	-26	-28	-28	-23	-20	-15	-19	-7	-12	-35	-62	-69	-42	-48	-66	-59	-49	-42	-44	-37	-28	-23	-27	-30
5	-20	-24	-29	-42	-45	-40	-39	-32	-37	-41	-30	-27	-27	-28	-30	-30	-25	-20	-18	-13	-13	-8	-3	-2
6	-10	-8	-13	-21	-21	-19	-22	-25	-24	-38	-52	-57	-70	-67	-71	-71	-64	-66	-62	-59	-62	-56	-45	-36
7	-37	-40	-41	-35	-38	-38	-36	-34	-33	-32	-31	-32	-32	-32	-30	-29	-26	-26	-24	-23	-26	-30	-29	-28
8	-24	-20	-21	-22	-24	-26	-25	-24	-23	-25	-25	-20	-20	-20	-18	-16	-15	-16	-17	-15	-13	-13	-14	-14
9	-16	-18	-16	-15	-15	-15	-14	-13	-2	-13	-20	-19	-14	-8	-12	-16	-16	-10	-5	3	-8	-16	-12	4
10	1	2	-11	-16	-5	-11	-19	-26	-22	-26	-20	-19	-32	-27	-24	-24	-15	-4	-11	-31	-44	-71	-110	-129
11	-125	-120	-103	-98	-95	-88	-85	-80	-74	-65	-62	-55	-48	-49	-50	-55	-54	-54	-51	-48	-44	-41	-38	-37
12	-36	-35	-34	-32	-31	-29	-32	-33	-32	-28	-25	-23	-19	-18	-17	-17	-17	-19	-13	-14	-12	-8	-8	-10
13	-10	-8	-5	-12	-15	-18	-18	-12	-19	-15	-10	-10	-7	-10	-11	-14	-15	-12	-8	-5	-6	-8	-8	-11
14	-11	-9	-5	-3	7	5	8	7	6	6	7	6	5	6	2	1	2	1	3	6	6	7	8	6
15	6	5	8	12	14	17	24	28	30	27	26	23	28	26	24	16	8	12	17	15	17	15	23	21
16	11	10	9	4	3	8	5	1	-5	-1	-5	-2	5	3	0	4	3	2	8	9	7	12	17	20
17	19	11	19	26	21	12	2	10	10	-7	-15	-14	-15	-15	-19	-18	-18	-22	-18	-15	-8	-7	-8	-14
18	-12	-10	-8	-7	-6	-8	-4	-1	-2	-3	-4	-3	-2	0	0	2	1	-2	4	6	4	3	4	4
19	6	7	6	8	10	9	6	1	-5	-10	-21	-24	-13	-10	-9	-9	-9	-7	-2	3	2	-1	3	4
20	7	3	0	-2	0	3	5	5	8	10	11	9	7	5	7	7	-1	1	2	4	3	12	16	14
21	14	14	12	14	15	15	13	14	15	16	17	15	15	17	20	19	14	17	14	14	15	16	16	18
22	18	16	14	9	10	14	15	17	33	47	37	-14	-22	-13	-26	-50	-74	-57	-47	-48	-37	-30	-22	-20
23	-20	-21	-23	-24	-23	-25	-19	-16	-19	-21	-23	-23	-20	-21	-24	-23	-21	-23	-21	-21	-22	-20	-14	-10
24	-9	-14	-16	-13	-11	-13	-18	-18	-28	-38	-30	-29	-31	-32	-31	-24	-19	-21	-20	-16	-16	-14	-9	-12
25	-8	-9	-14	-13	-10	-8	-8	-11	-16	-18	-15	-24	-23	-22	-28	-27	-30	-39	-39	-43	-33	-31	-23	-24
26	-36	-36	-39	-35	-28	-29	-27	-24	-32	-27	-22	-23	-26	-43	-46	-49	-46	-37	-43	-54	-47	-46	-40	-32
27	-26	-25	-28	-25	-23	-21	-22	-34	-39	-36	-27	-25	-35	-39	-36	-36	-37	-51	-53	-48	-54	-48	-45	-38
28	-35	-44	-39	-33	-31	-31	-31	-34	-29	-25	-21	-21	-43	-35	-34	-37	-43	-44	-40	-33	-31	-35	-43	-49
29	-45	-53	-46	-42	-48	-50	-64	-75	-88	-79	-60	-60	-65	-66	-65	-66	-78	-82	-103	-97	-108	-121	-112	-115
30	-96	-82	-80	-77	-70	-76	-76	-77	-69	-64	-60	-59	-57	-56	-57	-60	-60	-58	-45	-38	-35	-33	-32	-32
31	-26	-20	-26	-34	-36	-32	-30	-34	-33	-26	-22	-26	-24	-22	-25	-33	-41	-47	-38	-35	-35	-39	-35	-40

MAR



Appendix 1

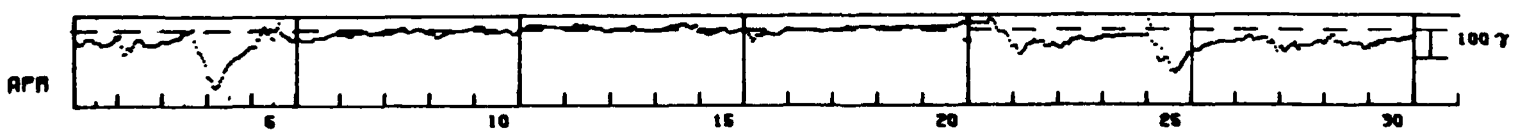
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

APRIL 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-46	-54	-47	-53	-44	-36	-31	-36	-34	-36	-44	-44	-40	-47	-56	-49	-48	-49	-46	-43	-39	-33	-21	-32
2	-20	-56	-85	-78	-60	-65	-71	-55	-49	-34	-35	-37	-44	-53	-56	-56	-53	-56	-56	-52	-49	-45	-39	-40
3	-41	-39	-38	-35	-32	-30	-27	-28	-25	-18	-10	-11	-12	-4	-1	2	-38	-58	-77	-82	-91	-103	-118	-100
4	-154	-171	-191	-197	-188	-183	-167	-156	-136	-128	-118	-112	-105	-101	-95	-92	-92	-86	-82	-77	-69	-66	-59	-58
5	-57	-57	-33	-31	-13	-1	7	-14	-16	2	-32	-36	-3	6	23	-13	-28	-24	-29	-32	-38	-41	-35	-29
6	-30	-37	-40	-41	-39	-41	-41	-39	-36	-28	-27	-28	-31	-29	-29	-25	-19	-19	-15	-13	-12	-14	-16	-13
7	-11	-12	-18	-21	-19	-17	-10	-7	-8	-12	-13	-4	-5	-4	-14	-12	-13	-9	-9	-12	-12	-10	-15	-9
8	-13	-13	-11	-6	-3	-1	2	7	9	3	-5	-10	-6	-3	-1	2	6	0	-2	-3	-6	-10	-13	-12
9	-13	-15	-25	-23	-23	-16	-12	-13	-8	-5	-5	-4	-1	0	-1	-1	1	2	3	4	6	8	10	13
10	13	10	8	8	5	-12	-5	-5	-4	-9	-10	-7	-9	-4	-1	0	3	-5	-9	-15	-16	-13	-8	-2
11	1	4	6	13	14	14	14	12	10	11	9	10	7	6	9	10	10	9	5	3	7	6	2	2
12	7	6	5	13	17	18	8	10	15	6	14	4	9	9	4	8	-1	5	5	-5	-9	-5	-5	-5
13	1	3	4	2	2	3	4	3	6	7	11	9	8	-4	-1	2	-2	-5	-7	-5	-2	-3	-1	-2
14	-1	-2	0	4	8	6	10	12	10	12	14	11	14	18	18	16	9	6	2	7	13	12	-12	-11
15	-10	-12	-9	-18	-15	-13	-10	-8	-4	-2	4	4	3	-1	-9	-13	-11	-5	-5	-4	0	-4	-4	-7
16	-3	-8	-19	-29	-42	-31	-18	-17	-21	-16	-12	-10	-11	-15	-18	-19	-17	-18	-18	-10	-5	-2	3	1
17	-2	-5	-5	-3	-1	-1	-3	-1	-1	6	-2	-4	-5	-2	-2	-4	-8	-8	-4	-6	-4	1	0	-4
18	-7	-6	-3	-2	4	7	10	11	9	6	3	7	10	9	7	7	8	10	10	7	5	7	7	3
19	3	3	10	5	2	6	5	5	6	9	10	8	7	18	11	9	7	5	7	10	10	7	8	9
20	9	11	11	10	10	7	5	11	13	13	12	11	10	10	11	12	13	15	16	20	23	22	24	24
21	22	20	20	22	21	23	23	21	18	23	34	34	27	17	3	-8	-12	-12	-13	-19	-26	-40	-62	-54
22	-53	-67	-85	-86	-73	-63	-50	-48	-45	-42	-36	-46	-41	-38	-42	-43	-56	-84	-58	-54	-48	-56	-62	-60
23	-66	-58	-48	-47	-53	-44	-35	-37	-32	-31	-27	-30	-35	-38	-36	-39	-39	-40	-37	-33	-29	-30	-27	-22
24	-25	-26	-26	-27	-30	-30	-21	-21	-22	-21	-19	-20	-23	-21	-29	-20	-21	-21	-24	-24	-25	-24	-22	-19
25	33	12	-46	-56	-52	-100	-109	-65	-108	-95	-101	-115	-142	-136	-148	-134	-132	-124	-112	-100	-94	-79	-82	-76
26	-69	-68	-69	-68	-64	-58	-53	-62	-50	-46	-45	-48	-49	-43	-40	-39	-39	-40	-42	-45	-42	-44	-42	-38
27	-35	-35	-36	-40	-31	-28	-22	-21	-29	-38	-32	-30	-39	-27	-31	-26	-30	-46	-49	-37	-46	-61	-74	-60
28	-56	-71	-77	-64	-58	-58	-53	-43	-59	-68	-51	-52	-53	-53	-51	-51	-52	-46	-41	-43	-37	-38	-46	-50
29	-38	-26	-29	-18	-19	-43	-43	-42	-41	-52	-52	-48	-44	-41	-48	-48	-46	-49	-51	-54	-63	-61	-59	-66
30	-51	-48	-52	-47	-40	-39	-40	-39	-31	-36	-34	-33	-33	-34	-38	-38	-34	-28	-29	-29	-28	-23	-22	-21



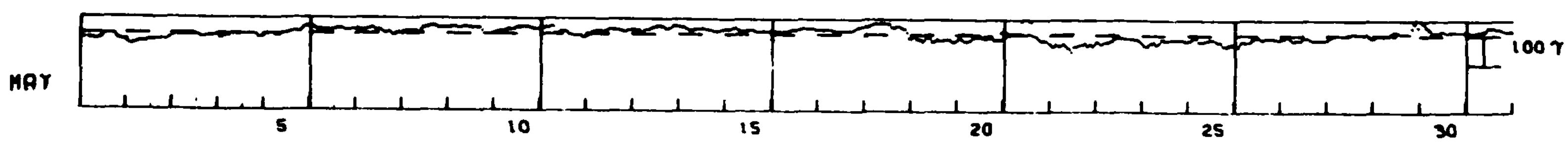
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

MAY 1979

UNIT=GAMMAS G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-18	-15	-16	-18	-21	-22	-22	-26	-24	-18	-16	-9	-6	-4	-5	-7	-9	-9	-18	-21	-24	-27	-26	-27
2	-35	-40	-37	-40	-35	-30	-29	-32	-32	-30	-28	-23	-26	-24	-23	-22	-23	-20	-21	-21	-21	-18	-15	-11
3	-8	-6	-9	-10	-10	-7	-8	-5	-6	-6	-7	-10	-11	-12	-16	-15	-11	-9	-10	-11	-7	-3	-6	-8
4	-16	-14	-11	-9	-8	-8	-6	-4	-4	-4	-6	-5	-3	-4	-3	-2	-5	-4	-4	-3	-15	-13	-14	-10
5	-2	-3	-6	-7	-7	-11	-7	-6	-6	-4	-1	2	3	5	6	5	4	5	5	12	18	21	21	19
6	17	14	12	9	9	9	7	7	7	5	8	11	12	14	16	13	12	9	7	8	10	13	13	12
7	12	6	5	8	12	13	15	17	18	8	10	9	6	0	-3	-1	4	-2	-3	-6	1	2	1	3
8	7	7	7	8	9	9	5	0	4	12	19	20	21	22	26	23	20	18	15	17	19	20	18	19
9	18	23	22	20	15	16	20	23	21	23	17	16	15	20	16	16	16	5	-4	-5	-6	-2	-1	3
10	5	6	9	9	11	11	14	14	12	14	17	21	22	21	24	20	22	18	15	14	12	15	15	15
11	17	21	18	16	21	27	19	-2	-6	3	10	9	5	2	-6	-2	-9	-10	-10	-10	-8	-15	-14	-7
12	-4	-2	5	8	10	6	7	8	7	7	14	16	14	14	10	11	11	7	4	8	12	13	11	10
13	9	12	12	10	12	12	13	12	16	20	22	23	26	23	21	18	13	15	18	22	26	26	22	20
14	19	20	17	13	9	10	13	15	15	14	17	17	14	12	10	9	8	5	6	7	9	12	14	15
15	15	11	17	21	17	12	10	6	7	11	12	12	13	10	8	4	6	6	5	7	4	5	6	5
16	6	7	4	4	6	8	8	6	11	13	13	15	14	16	17	19	17	16	14	15	14	13	11	12
17	13	13	13	14	13	12	11	8	6	8	9	7	7	6	7	10	11	11	15	20	23	22	24	25
18	25	26	29	32	35	33	32	36	36	35	33	31	31	19	17	23	26	26	17	13	13	2	-16	-18
19	-10	-7	-20	-17	-21	-26	-19	-12	-11	-16	-29	-26	-18	-21	-20	-20	-20	-16	-16	-13	-27	-24	-24	-18
20	-13	-18	-23	-27	-28	-21	-18	-12	-10	-8	-4	-9	-14	-15	-12	-12	-14	-16	-21	-19	-16	-21	-16	-11
21	-7	-3	-1	-4	0	3	4	5	-1	-3	0	-1	0	1	-6	-8	-11	-18	-24	-20	-20	-24	-30	-33
22	-42	-41	-31	-39	-37	-34	-31	-39	-47	-60	-50	-39	-38	-41	-35	-33	-33	-28	-40	-34	-32	-42	-33	-25
23	-29	-36	-32	-27	-28	-25	-22	-18	-15	-11	-9	-12	-13	-14	-16	-16	-16	-16	-16	-18	-19	-20	-24	-31
24	-38	-40	-38	-29	-26	-23	-36	-30	-26	-15	-20	-24	-16	-21	-21	-15	-18	-21	-21	-20	-20	-24	-26	-19
25	-19	-13	-9	-13	-26	-25	-26	-21	-19	-22	-15	-14	-19	-22	-27	-26	-29	-39	-40	-41	-32	-33	-33	-30
26	-39	-40	-26	-21	-28	-26	-23	-21	-14	-12	-8	-9	-13	-18	-14	-12	-13	-11	-12	-15	-15	-15	-18	-14
27	-12	-11	-5	-9	-15	-22	-21	-16	-21	-22	-14	-10	-11	-13	-17	-21	-22	-20	-19	-21	-19	-21	-20	-16
28	-11	-6	-3	-1	0	-1	-2	-3	-3	-4	1	2	5	1	-1	3	-1	0	-1	-1	-3	-8	-13	-12
29	-6	-2	-1	-5	-7	-5	-2	-1	4	8	11	7	4	2	1	4	2	2	2	24	41	83	23	81
30	41	37	26	20	14	5	8	7	7	7	13	11	7	5	5	8	9	9	8	10	11	10	7	5
31	3	4	5	6	8	12	12	10	13	15	25	23	20	21	16	20	17	14	12	10	10	10	9	9



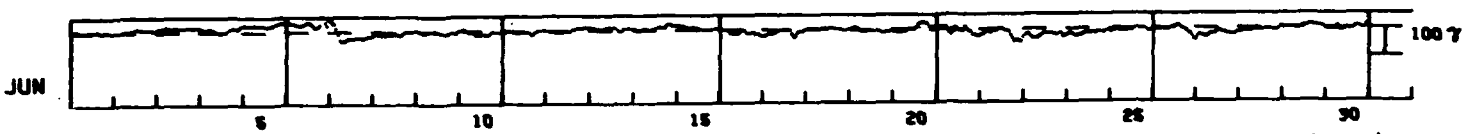
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

JUNE 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	3	3	4	2	-1	-4	-4	-3	1	3	3	2	1	0	0	-1	-4	-5	1	1	0	-2	-5	-6
2	-4	-4	-4	-1	-1	1	3	3	5	2	3	7	11	10	5	4	4	4	6	6	4	2	2	3
3	10	12	13	14	14	11	10	11	12	12	11	11	11	11	11	12	14	14	11	10	12	14	14	11
4	7	3	7	7	10	9	5	1	-1	-5	-6	-3	-1	0	0	5	9	10	13	7	9	15	19	22
5	23	23	22	21	20	22	21	19	21	22	20	17	14	14	20	22	24	26	28	30	30	27	27	26
6	27	27	24	23	22	19	17	17	19	24	27	31	28	23	19	11	13	16	22	53	48	28	19	41
7	37	25	22	7	-13	-34	-38	-35	-32	-27	-25	-25	-25	-26	-22	-21	-27	-28	-27	-22	-19	-18	-20	-15
8	-9	-14	-11	-13	-14	-11	-16	-12	-10	-12	-10	-10	-13	-17	-16	-14	-8	-4	-1	-3	-3	-5	-1	0
9	2	-3	-8	-11	-10	-5	-4	-2	-2	-2	-9	-7	-8	-10	-12	-14	-10	-9	-6	-6	-11	-13	-4	1
10	2	4	5	-5	-10	-11	-10	-12	-18	-15	-15	-13	-15	-16	-17	-15	-9	-4	-6	-8	-6	-5	-6	-9
11	-5	-4	-5	-6	-8	-4	-5	-11	-8	-5	-4	-6	-6	-7	-9	-15	-12	-5	-2	1	2	-2	-2	-2
12	-4	-7	-8	-7	-9	-9	-6	-10	-8	-6	-3	-5	-5	0	3	3	7	4	5	5	11	8	8	5
13	6	4	3	1	1	1	0	2	6	9	7	5	6	6	2	-5	-7	-3	4	5	4	4	2	1
14	0	-5	-5	-5	0	4	1	0	-4	-4	4	5	7	9	10	7	6	7	15	20	17	12	12	13
15	11	13	10	9	6	3	8	7	7	5	4	2	-1	-3	-2	0	0	1	-1	0	0	1	3	2
16	-4	-2	-2	-7	-6	-14	-17	-18	-17	-14	-12	-5	-1	-5	-14	-15	-13	-10	-11	-19	-20	-21	-25	-27
17	-26	-19	-15	-17	-14	-11	-11	-4	-6	-3	-3	-2	-1	-1	-4	-18	-27	-23	-12	-8	-6	-7	-2	1
18	2	1	0	0	0	-1	-2	1	3	4	3	2	2	1	1	-2	-2	-2	-3	-5	-7	-3	1	2
19	3	7	7	3	-3	-8	-10	-7	-5	-4	-4	-6	-5	-5	-6	-8	-11	-14	-11	-8	-6	-9	-8	-9
20	-9	-12	-13	-11	-7	-8	-6	-1	2	-1	0	2	7	15	20	23	21	18	17	8	4	3	3	3
21	3	5	5	5	6	-4	-14	-21	-11	-8	-4	-3	-6	-10	-3	-1	-4	-11	-12	-22	-22	-26	-27	-25
22	-18	-17	-12	-13	-10	-17	-6	-9	-7	-5	1	0	-6	-13	-9	-13	-23	-34	-44	-40	-39	-46	-43	-28
23	-22	-19	-17	-28	-35	-32	-35	-36	-26	-23	-17	-18	-18	-20	-19	-17	-21	-24	-21	-16	-17	-30	-25	-22
24	-19	-15	-20	-26	-24	-25	-25	-25	-19	-17	-14	-18	-15	-14	-13	-15	-12	-13	-13	-15	-14	-8	-10	-13
25	-10	-9	-6	-9	-11	-13	-10	-12	-10	-7	-8	-8	-3	1	-1	-2	-4	-4	-2	-6	-12	-10	-8	-8
26	-6	-5	-3	-7	-3	-6	-6	-5	-6	-1	4	4	2	10	5	-2	-4	-11	-9	-20	-23	-31	-41	-45
27	-32	-25	-20	-32	-34	-31	-27	-21	-19	-21	-19	-13	-9	-15	-18	-18	-21	-23	-22	-25	-24	-20	-16	-16
28	-14	-12	-12	-14	-12	-12	-11	-7	-11	-9	-7	-6	-8	-6	-4	-4	-5	-6	-10	-10	-10	-4	1	4
29	-2	-3	-1	-1	0	-1	-2	-2	0	0	4	6	3	5	10	8	6	3	5	7	6	3	0	-7
30	-9	-5	-8	-5	-5	-8	6	-11	-10	-7	-4	-3	-3	-5	-4	0	5	6	4	-3	-5	0	11	6



Note: Due to the adoption of updated, improved baselines for the magnetic observatories used in the Dst calculation there is a discontinuity (of about 10 nT) in the reference level of the provisional Dst between the last hourly interval of May (distributed last month) and the first hour of June. Revised provisional Dst values based on the new baselines will be provided upon request. However, the baseline changes have no significant effects on relative values of Dst over period of one month or less. The final Dst values for 1979 will be published after the end of the year based on baselines further updated. The revision of baselines is related to the circumstance that during periods of high solar activity, accurate baseline determinations are more difficult than during years of low solar activity.

NASA/GODDARD SPACE FLIGHT CENTER

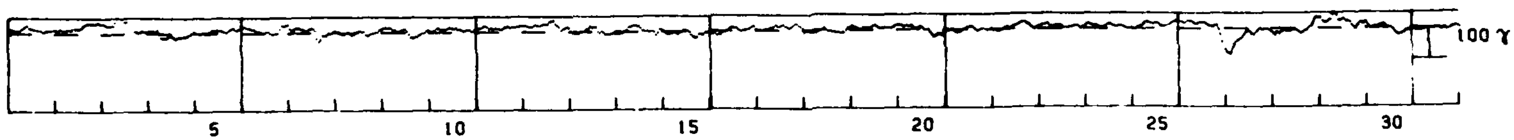
HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JULY 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	15	12	8	8	8	9	13	18	23	26	17	14	13	12	11	11	9	6	6	9	9	9	12	12
2	10	10	14	10	11	10	13	12	13	15	16	16	15	20	26	31	34	33	33	32	31	37	33	33
3	31	29	25	26	25	24	37	52	73	62	49	36	36	28	21	16	8	5	2	4	9	5	5	7
4	9	8	5	7	12	2	-13	-16	-16	-13	-8	-8	-12	-16	-15	-11	-14	-10	-9	-9	-5	-2	4	4
5	0	-1	-2	0	3	2	2	5	5	7	10	10	10	9	5	4	5	11	13	17	11	9	13	15
6	19	20	17	15	13	12	11	6	7	4	2	1	6	6	-1	-4	-4	-2	-1	13	25	22	26	27
7	14	9	11	15	15	13	12	10	5	8	13	13	11	5	-20	-31	-23	-9	-12	-8	-1	-5	1	6
8	2	4	-3	-7	-5	-1	2	-4	-5	-6	3	5	7	4	1	-8	-11	-7	-3	-2	1	1	9	11
9	14	15	15	15	13	8	7	3	3	7	10	12	4	-5	-14	-19	-14	-14	-9	-5	-2	6	7	8
10	3	4	8	13	13	9	11	9	5	13	15	13	12	14	10	10	7	4	7	9	8	3	5	8
11	12	12	13	18	19	16	9	13	10	12	11	11	7	12	16	17	18	15	15	15	17	17	20	20
12	19	19	16	15	15	21	21	19	20	23	25	24	25	33	35	37	25	20	14	3	10	12	15	13
13	3	-1	-1	-5	-8	-2	0	1	8	11	18	13	16	14	0	-4	3	-2	-8	-10	-7	-8	-6	-7
14	-8	-8	-5	-4	2	6	15	16	19	21	18	18	12	5	0	0	0	-1	1	-2	-12	-4	8	5
15	1	-5	-10	-7	-6	-5	-4	-9	-4	-1	4	3	2	-2	-11	-16	-21	-17	-8	-8	-10	-3	-2	-5
16	-6	-10	-5	-13	-12	-11	-4	-4	-1	4	11	12	10	5	3	-1	0	2	3	6	8	13	14	4
17	2	2	0	2	4	5	7	9	11	17	13	11	15	18	12	10	7	9	14	20	21	15	11	6
18	-8	-2	-3	-6	-10	-8	-11	-5	-3	2	7	-1	-6	-4	-5	-8	-7	-9	-10	-10	-9	-1	6	8
19	13	9	7	5	2	1	5	9	7	6	10	14	16	10	6	7	9	6	5	5	6	8	13	15
20	16	16	11	12	13	12	13	11	3	4	6	9	5	-2	-2	0	-9	-17	-25	-20	-13	-16	-19	-5
21	-1	-4	-1	1	-5	-10	-5	-7	-4	1	4	5	10	9	4	-1	-5	-2	2	3	0	-2	1	2
22	2	-2	-7	-7	-4	-1	5	7	4	4	9	11	12	16	20	22	23	16	15	9	4	-1	3	8
23	10	13	13	15	17	8	6	7	10	12	12	5	1	3	3	4	6	7	11	11	7	1	7	9
24	14	16	13	11	9	10	7	3	3	6	11	14	16	10	7	5	7	10	7	5	3	0	1	2
25	-1	0	4	7	9	13	20	19	19	15	15	16	18	14	8	8	7	9	12	15	19	22	25	23
26	21	20	17	19	24	23	23	18	14	15	19	20	19	18	13	11	8	5	10	12	-1	-18	-41	-67
27	-77	-81	-82	-59	-51	-42	-38	-34	-31	-21	-12	-7	-10	-17	-20	-13	-7	2	-2	-5	-2	-4	-6	-11
28	-16	-22	-12	-17	-12	-7	-7	-10	-9	-7	-4	-3	-6	-10	-15	-12	-6	-6	3	6	11	30	36	32
29	35	23	18	18	24	29	43	51	45	25	24	29	27	20	22	19	9	2	-4	9	17	15	12	21
30	12	1	-1	2	5	4	5	9	13	8	0	2	1	-4	-11	-18	-22	-20	-18	-14	-8	-9	-5	-6
31	-7	-8	-5	-9	-9	-8	-5	-3	-1	-1	-3	-2	2	2	-4	-5	-5	-7	-6	-4	1	3	6	4

JUL



NOTE: Because of problems in the scale value and the baseline at the Honolulu Magnetic Observatory, data from only three observatories (San Juan, Kakioka and Hermanus) were used in the derivation of the above Dst values. It appears that the problems developed toward the end of June. Therefore the provisional Dst values for June may not be accurate near the end of that month.

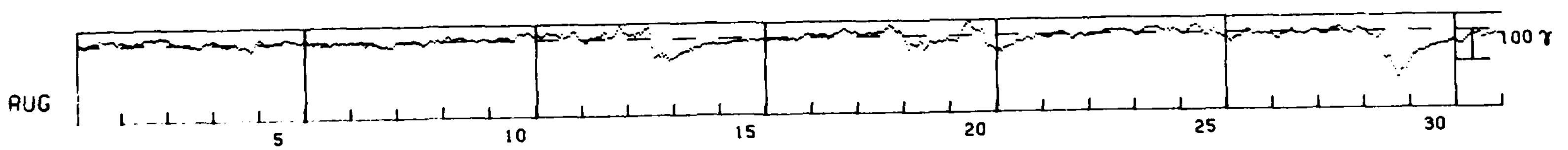
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

AUGUST 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	5	2	-3	-5	-1	5	6	7	9	8	9	18	31	14	11	12	14	12	15	13	7	2	12	11
2	12	7	5	5	4	-1	3	8	6	3	9	15	15	14	15	16	14	12	18	18	22	19	19	19
3	15	8	4	0	-3	0	-2	-2	-6	-5	-3	-8	-9	-8	-8	-12	-13	-11	-1	1	5	5	7	11
4	9	5	2	-2	-9	-3	-10	-10	-5	-1	-3	0	-7	-14	-13	-13	-12	-16	-21	-28	-21	-4	5	12
5	13	7	-3	-6	-6	-1	-3	0	4	2	1	4	9	12	11	8	5	5	4	0	0	-1	5	10
6	8	2	-1	-2	-7	-1	2	0	-11	-8	-7	-7	-10	-10	-2	-1	-1	-6	-1	-2	-1	-3	-1	2
7	2	-1	-3	-4	1	4	-6	-13	-7	-2	-3	-9	-7	-10	-13	-16	-17	-18	-13	-21	-19	-19	-10	-3
8	-1	-2	-3	-4	-4	0	-3	-4	2	-1	-4	-5	-8	-13	-9	-6	-1	2	0	-4	3	3	-1	-1
9	5	12	16	10	3	5	7	9	11	10	9	4	1	1	2	2	-1	-5	1	2	5	4	4	3
10	-1	-2	-1	3	8	11	8	6	8	6	-1	-5	0	11	19	20	20	17	21	25	21	16	12	13
11	15	12	8	12	16	22	20	16	18	18	16	12	8	19	5	7	12	12	23	25	22	11	2	-1
12	-3	-11	-9	0	5	3	2	8	8	9	15	23	19	5	4	5	11	18	29	41	33	20	21	14
13	10	13	15	8	18	21	13	22	31	32	36	16	-30	-63	-59	-52	-60	-47	-60	-53	-64	-73	-65	-64
14	-61	-57	-51	-48	-45	-41	-41	-40	-33	-39	-27	-29	-31	-30	-22	-19	-19	-19	-17	-18	-15	-19	-18	-17
15	-16	-16	-17	-17	-15	-14	-11	-10	-10	-11	-10	-11	-9	-8	-13	-6	-7	-6	-8	-9	-6	-3	-4	-4
16	-7	-5	-4	-3	-3	-2	-3	-8	-2	-6	-8	-7	-6	-4	-3	-9	-10	-3	-1	1	7	8	9	10
17	9	5	3	5	9	8	6	7	-7	0	4	9	11	11	16	18	24	22	15	13	10	11	14	12
18	7	3	3	4	9	12	10	8	10	10	14	12	13	13	22	25	35	30	25	14	11	14	9	1
19	-17	-28	-46	-26	-30	-32	-35	-29	-18	-25	-46	-38	-33	-19	-23	-24	-26	-20	-17	-21	-20	-17	-11	-16
20	-16	-17	-17	-20	-10	-1	16	29	37	46	41	24	18	13	15	10	18	4	-29	-38	-36	-38	-43	-46
21	-52	-47	-55	-43	-40	-39	-35	-35	-34	-29	-20	-20	-23	-23	-16	-11	-10	-15	-19	-11	-1	-3	-2	-5
22	-8	-7	-12	-9	-6	2	0	3	7	6	6	1	-3	-3	-15	-16	-9	-6	-2	0	-3	-9	-8	-5
23	-5	-6	-6	-3	0	-1	-2	3	8	10	10	10	10	10	9	8	10	8	10	7	5	4	3	-2
24	-7	-6	-2	3	9	15	15	17	17	16	17	19	15	10	8	6	20	10	2	11	13	6	6	3
25	-1	-4	-2	8	11	20	21	25	24	16	16	5	-7	-11	-10	4	0	11	-5	-10	-8	-13	-17	-19
26	-18	-26	-32	-22	-18	-14	-13	-13	-2	0	6	7	3	-7	-10	-5	-5	-5	-8	-6	-4	-8	-8	-9
27	-12	-18	-21	-21	-10	-5	-6	-4	-1	2	8	-3	-6	-6	-4	-8	-8	-8	-5	-1	4	2	1	1
28	-4	-7	-8	-7	-8	-2	5	9	7	9	13	13	5	-1	-2	-6	-8	-9	-1	3	9	7	3	0
29	0	-6	-13	-16	-15	-1	-26	-23	-15	-50	-87	-91	-86	-85	-104	-119	-128	-150	-150	-129	-128	-140	-126	-109
30	-93	-79	-78	-73	-65	-67	-66	-65	-59	-59	-53	-51	-51	-50	-46	-46	-43	-44	-42	-43	-37	-37	-33	-34
31	-40	-42	-44	-42	-35	-29	-22	-17	-11	-14	-14	-10	-9	-25	-23	-22	-15	-19	-17	-15	-10	-16	-13	-14



NOTE: The above values are based on data from three observatories: Hermanns, Kakioka, and San Juan. The data from Honolulu are not used because of instrumental difficulties. The Provisional Dst values for July 1979 were also derived from the same three observatories; see the footnote in the July tabulation of provisional Dst values.

Appendix 1

Appendix 1

NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

SEPTEMBER 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-20	-21	-19	-20	-21	-21	-21	-20	-18	-14	-11	-12	-9	-11	-16	-23	-24	-23	-21	-24	-21	-20	-16	-15
2	-18	-16	-14	-13	-15	-16	-15	-13	-16	-18	-16	-14	-10	-11	-15	-20	-21	-17	-15	-14	-13	-14	-12	-9
3	-8	-7	-12	-18	-17	-19	-19	-24	-23	-18	-13	-7	-12	-14	-14	-16	-18	-12	-8	-9	-9	-6	-3	1
4	2	1	4	4	-3	-10	-14	-15	-5	-4	-3	-3	-1	1	-2	-9	-12	-9	-9	-8	-4	-2	-1	1
5	-2	0	-4	-7	-14	-14	-9	-11	-14	-14	-10	-7	-12	-17	-25	-26	-22	-30	-28	-27	-24	-17	-13	-14
6	-5	-9	-9	-21	-15	-18	-25	-25	-22	-33	-33	-31	-22	-17	-11	-13	-17	-14	-12	-13	-13	-14	-11	-9
7	-4	0	-5	-13	-12	-8	-8	-10	-13	-12	-11	-14	-10	-6	-5	-7	-10	-12	-13	-10	-14	-4	-8	-11
8	-15	-12	-8	-7	-6	-7	-9	-6	-6	-4	-3	-3	-7	-8	-6	0	0	-1	0	2	1	-4	-7	-8
9	-7	-7	-6	-3	-3	-3	-4	-8	-5	-4	-9	-9	-6	-7	-9	-9	-7	-7	-10	-13	-14	-17	-15	-15
10	-14	-16	-14	-11	-6	-4	-2	-1	-3	-4	-5	-10	-6	-3	1	-4	-10	-13	-20	-26	-27	-30	-29	-30
11	-31	-24	-19	-20	-21	-17	-14	-12	-13	-19	-28	-30	-26	-24	-25	-28	-34	-36	-37	-30	-23	-19	-19	-20
12	-19	-21	-13	-21	-5	-5	0	1	4	6	7	10	15	12	10	7	8	12	8	7	5	5	-5	-6
13	-7	-3	1	2	3	1	1	2	7	5	5	0	4	7	4	3	3	4	3	2	5	6	11	11
14	10	7	7	5	8	7	9	14	22	22	16	13	15	16	14	10	13	15	11	8	-4	-12	-14	-5
15	0	2	0	-4	-8	-6	-6	-6	-1	-5	0	-4	-5	-2	-1	3	6	7	7	9	10	9	8	10
16	9	8	10	8	12	9	4	1	1	7	8	6	9	11	14	7	4	0	-3	-2	-3	-3	0	6
17	-4	-2	2	3	6	8	6	8	12	11	17	10	13	20	24	23	22	30	27	22	24	22	22	17
18	-17	-55	-66	-47	-35	-27	-41	-79	-109	-113	-122	-139	-121	-126	-145	-156	-156	-123	-109	-99	-90	-84	-71	-61
19	-62	-65	-62	-56	-54	-54	-55	-53	-52	-47	-44	-44	-41	-43	-47	-48	-48	-45	-38	-31	-32	-37	-38	-35
20	-38	-39	-30	-24	-24	-24	-25	-25	-19	-20	-15	-12	-25	-37	-45	-51	-61	-54	-52	-48	-44	-51	-46	-34
21	-31	-16	-13	-27	-44	-47	-44	-47	-49	-47	-41	-39	-31	-30	-29	-31	-32	-28	-24	-34	-31	-28	-24	-26
22	-24	-22	-17	-15	-15	-15	-14	-11	-7	-7	-8	-4	-11	-12	-11	-6	-4	-4	-5	-6	-6	-7	-7	-5
23	-5	-8	-10	-13	-14	-17	-13	-10	-9	-9	-8	-10	-9	-11	-21	-25	-27	-16	-12	-10	-9	-8	-11	-10
24	-7	-3	0	-1	-4	-6	-6	-11	-7	-7	-13	-25	-26	-22	-14	-13	-14	-13	-10	-11	-16	-27	-36	-38
25	-40	-43	-39	-41	-42	-39	-37	-33	-30	-25	-19	-15	-11	-11	-14	-26	-41	-51	-40	-34	-28	-30	-25	-30
26	-29	-25	-20	-22	-18	-19	-25	-27	-21	-16	-16	-17	-13	-11	-14	-13	-14	-11	-18	-24	-16	-19	-25	-30
27	-33	-31	-34	-26	-24	-26	-25	-27	-22	-17	-13	-11	-5	-4	-5	-10	-14	-14	-20	-20	-17	-19	-18	-22
28	-24	-22	-19	-15	-14	-16	-25	-29	-29	-31	-28	-20	-9	-3	-1	-8	-17	-22	-18	-15	-16	-14	-32	-29
29	-30	-36	-27	-20	-16	-23	-24	-25	-26	-24	-22	-17	-11	-21	-13	-14	-23	-21	-27	-21	-16	-14	-13	-7
30	-8	-11	-6	-6	-15	-17	-19	-25	-27	-27	-22	-16	-11	-10	-15	-20	-21	-16	-17	-15	-14	-11	-9	-7

NOTE: The above values are based on data from three observatories: Hermanns, Kakioka, and San Juan. The data from Honolulu are not used because of instrumental difficulties. The Provisional Dst values for July and August 1979 were also derived fr the same three observatories; see the footnote in the July tabulation of provisional Dst values.

Appendix 1

NASA/GODDARD SPACE FLIGHT CENTER

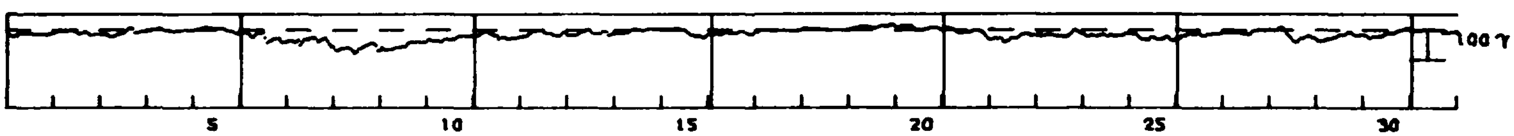
HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

OCTOBER 1979

UNIT=GAMMAS G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-20	-25	-24	-24	-19	-13	-10	-12	-13	-12	-14	-16	-15	-18	-18	-18	-16	-14	-15	-17	-18	-14	-11	-11
2	-8	-6	-3	-3	-4	-5	-5	-3	-1	-2	-8	-11	-16	-17	-11	-8	-9	-15	-21	-20	-17	-13	-16	-19
3	-16	-20	-16	-20	-26	-27	-26	-19	-14	-13	-12	-11	-7	-2	6	6	-1	-13	-14	-8	-5	-6	-6	-8
4	-3	-6	1	2	0	5	5	-2	-5	-4	-7	-9	-8	-10	-9	-5	-2	-2	-1	-5	-5	-7	-6	-4
5	1	2	4	6	7	8	9	6	5	3	2	0	4	4	2	-2	-6	-9	-9	-10	-13	-16	-15	-11
6	-9	-11	-10	-15	-21	-27	-25	-15	-10	-12	-14	-9	-30	-46	-36	-39	-30	-30	-28	-29	-41	-45	-40	-38
7	-36	-37	-40	-43	-40	-34	-55	-40	-31	-33	-34	-26	-24	-29	-29	-41	-36	-29	-31	-24	-39	-49	-56	-57
8	-68	-70	-64	-59	-63	-58	-57	-58	-64	-71	-79	-71	-61	-60	-56	-52	-49	-47	-42	-44	-44	-54	-71	-65
9	-56	-67	-68	-66	-57	-60	-61	-57	-56	-57	-54	-57	-54	-46	-41	-39	-43	-43	-38	-40	-39	-44	-45	-38
10	-32	-34	-40	-40	-40	-35	-42	-42	-31	-30	-32	-36	-35	-30	-26	-21	-18	-19	-18	-22	-21	-17	-19	-19
11	-17	-17	-15	-11	-8	-4	-6	-8	-14	-18	-22	-23	-32	-26	-24	-22	-32	-32	-30	-26	-29	-27	-24	-22
12	-21	-20	-20	-16	-12	-6	-4	-4	-1	-1	-1	-11	-15	-16	-13	-14	-21	-22	-24	-19	-16	-8	-11	-19
13	-18	-19	-18	-19	-16	-12	-6	-5	-5	1	1	-8	-15	-16	-16	-14	-14	-3	-3	-8	-20	-14	-12	-13
14	-7	-13	-11	-13	-11	-8	-8	-1	1	4	2	-1	-3	-6	-3	1	2	5	3	0	0	0	1	1
15	1	0	-2	-3	-3	1	4	5	1	-4	-5	-3	-11	-14	-20	-19	-24	-25	-22	-24	-29	-27	-19	-13
16	-13	-15	-15	-12	-16	-19	-14	-10	-9	-12	-12	-12	-14	-14	-11	-6	-6	-7	-9	-15	-19	-14	-12	-8
17	-8	-4	-2	-1	-2	-1	-2	-4	-3	-4	-3	-1	-3	-2	-1	-3	-2	-3	-5	-3	-3	-2	-2	2
18	5	5	3	2	3	1	-2	-2	-3	-4	-5	-5	-5	-6	-4	-3	-2	-2	-3	-3	-2	-2	-1	0
19	2	4	6	5	6	11	7	7	7	8	6	1	0	0	8	11	13	11	8	10	13	17	16	9
20	4	2	13	10	12	14	14	9	3	-1	-6	-4	-6	-1	3	3	5	8	7	3	6	0	-3	0
21	6	6	4	2	-2	-4	-5	-13	-11	-11	-8	-9	-7	-7	-5	-1	-4	-7	-6	-9	-15	-22	-32	-36
22	-37	-30	-27	-33	-32	-31	-41	-44	-37	-35	-27	-27	-27	-27	-24	-18	-14	-14	-13	-15	-23	-24	-18	-23
23	-19	-18	-18	-17	-16	-14	-17	-20	-22	-24	-24	-20	-22	-27	-25	-20	-16	-11	-3	-1	-7	-11	-16	-19
24	-21	-26	-21	-18	-21	-24	-21	-20	-18	-15	-18	-25	-20	-15	-23	-24	-22	-22	-18	-18	-16	-12	-12	-13
25	-14	-15	-17	-23	-29	-35	-26	-36	-38	-33	-24	-23	-31	-36	-36	-31	-31	-27	-21	-29	-37	-39	-37	-31
26	-31	-27	-19	-18	-17	-12	-12	-13	-14	-14	-12	-12	-22	-24	-19	-14	-13	-14	-12	-14	-16	-13	-11	-9
27	-8	-9	-5	-9	-10	-8	-5	-11	-10	-15	-17	-18	-17	-14	-5	-3	-1	-2	1	-1	-5	-2	1	1
28	-2	-5	-5	0	6	8	3	-9	-15	-24	-30	-38	-43	-41	-35	-27	-27	-25	-21	-20	-23	-30	-31	-36
29	-41	-37	-39	-40	-32	-29	-28	-27	-24	-24	-20	-15	-16	-16	-14	-10	-7	-12	-19	-22	-22	-21	-18	-18
30	-20	-24	-30	-27	-22	-22	-24	-25	-21	-18	-14	-12	-11	-12	-12	-10	-6	-3	-1	0	2	4	6	1
31	-5	-8	-7	-5	-4	-1	1	1	0	2	1	-2	-2	-2	-1	-4	-9	-11	-14	-11	-7	-6	-8	-11

OCT



Note: Beginning this month, data from Honolulu are included again in the derivation of provisional Dst values. Thus data from all the four Dst observatories, Hermanus, Kakioka, Honolulu, and San Juan are used in calculating the above Dst index. Honolulu data were not used in deriving the Provisional Dst values for the months of July, August, and September. The level change from the end of September to the beginning of October is judged to be mostly artificial. When the three month data gap for Honolulu is filled, this artificial discontinuity will be removed.

NASA/GODDARD SPACE FLIGHT CENTER

Appendix 1

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

NOVEMBER 1979

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-20	-23	-24	-27	-28	-25	-21	-16	-7	0	2	-2	-1	7	7	2	-8	-13	-23	-18	-10	-14	-17	-24
2	-24	-31	-32	-28	-27	-24	-28	-26	-25	-29	-23	-17	-14	-11	-18	-22	-24	-23	-26	-25	-21	-19	-16	-13
3	-10	-8	-10	-9	-12	-13	-12	-10	-10	-7	-6	-11	-14	-8	-3	-2	-11	-20	-22	-20	-20	-21	-19	-21
4	-18	-22	-27	-21	-14	-13	-20	-21	-16	-11	-14	-19	-17	-10	-7	-6	-7	-8	-6	-5	-2	-2	-2	-4
5	-5	-5	-4	-3	-9	0	0	0	3	5	3	2	1	7	9	11	10	8	7	5	6	5	3	0
6	-2	-3	-2	1	6	10	7	7	7	5	6	6	8	12	13	12	12	11	10	9	8	8	8	5
7	1	1	3	5	1	5	7	9	0	-5	-11	-10	-4	1	7	5	-2	-20	-29	-29	-27	-28	-25	-25
8	-25	-25	-26	-26	-26	-23	-23	-27	-38	-45	-45	-33	-43	-39	-35	-30	-24	-18	-12	-7	-6	-9	-9	-7
9	-7	-15	-15	-14	-16	-19	-21	-20	-15	-11	-7	-7	-3	-15	-20	-29	-32	-37	-26	-19	-39	-33	-29	-28
10	-31	-33	-32	-25	-21	-20	-23	-26	-21	-20	-20	-23	-25	-23	-23	-21	-22	-21	-20	-23	-20	-24	-33	-30
11	-31	-36	-25	-14	-13	-8	-6	-7	-7	-4	-2	1	1	8	13	15	20	25	26	20	14	14	10	7
12	6	1	1	-1	2	7	9	0	1	0	0	13	5	6	1	-1	-3	-3	0	4	4	1	-9	-9
13	-6	-17	-31	-47	-52	-60	-61	-59	-61	-61	-61	-66	-70	-68	-77	-84	-90	-87	-81	-80	-73	-70	-73	-74
14	-81	-90	-85	-82	-79	-76	-66	-64	-60	-59	-55	-54	-56	-55	-55	-56	-53	-50	-49	-45	-40	-35	-34	-33
15	-33	-34	-35	-30	-27	-24	-22	-22	-21	-22	-23	-23	-23	-23	-26	-24	-21	-21	-18	-14	-13	-4	-3	0
16	3	9	18	5	-9	-19	-25	-32	-30	-22	-15	-17	-19	-20	-24	-26	-24	-25	-24	-23	-20	-14	-9	-12
17	-16	-11	-10	-11	-13	-16	-16	-8	-8	-14	-11	-10	-13	-11	-11	-12	-6	-7	-7	-6	-4	-1	-1	1
18	2	1	6	6	7	6	7	6	6	3	0	-1	-1	2	2	1	-1	-2	-1	0	4	3	3	4
19	3	1	1	4	8	7	1	-4	-8	-9	-5	-5	-3	1	3	6	6	7	5	1	3	1	3	-1
20	1	-3	-5	-1	4	3	1	1	-5	-7	0	-3	0	-1	1	0	-1	0	1	2	4	3	4	6
21	6	3	-2	-4	-3	-4	-6	-6	-10	-13	-10	-8	-10	-7	-6	-6	-7	-8	-10	-9	-9	-8	-6	-2
22	1	1	0	1	0	-2	1	2	0	0	3	5	4	-5	-1	-2	0	1	0	-1	-3	-4	-6	-6
23	-5	-2	1	1	-1	0	1	0	-2	-1	2	1	10	11	8	7	3	1	1	2	-1	-2	-4	-7
24	-9	-9	-14	-19	-26	-33	-39	-44	-44	-45	-31	-29	-50	-46	-32	-30	-27	-28	-37	-32	-29	-38	-42	-38
25	-43	-51	-59	-61	-51	-47	-46	-41	-39	-35	-33	-32	-31	-29	-28	-28	-27	-25	-21	-18	-14	-15	-15	-11
26	-9	-9	-10	-10	-7	-6	-5	-1	2	4	5	4	4	4	4	-2	-7	-6	-5	-9	-9	-10	-10	-7
27	-9	-9	-4	-1	-2	-7	-11	-7	-5	-4	-4	-3	-2	0	-3	-4	-5	-4	-3	-3	-3	-4	-5	-2
28	0	1	1	-1	-3	-3	-1	4	6	7	8	9	10	10	7	5	4	8	10	11	10	6	8	12
29	14	16	15	12	15	16	18	17	14	13	15	17	19	19	13	10	15	26	28	21	22	23	18	20
30	23	20	18	18	18	20	19	33	32	6	8	17	26	20	26	26	16	14	14	15	13	10	8	9

Note: The Hermanus Observatory has informed us that the hourly H values from Hermanus for six hourly intervals beginning 0700 UT and ending 1300 UT on April 2, 1979 were in error. These errors have been corrected, and accordingly the Provisional Dst values for these hourly intervals have been corrected. As indicated in the footnote under the June 1979 Provisional Dst table, we updated the observatory baselines and recalculated Provisional Dst from January 1979. The updated Provisional Dst values that incorporate the Hermanus corrections are available upon request.

Appendix 1

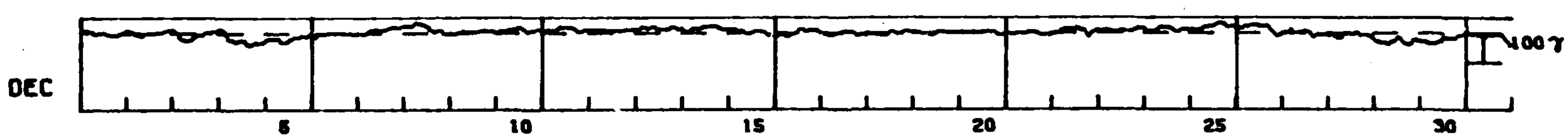
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

DECEMBER 1979

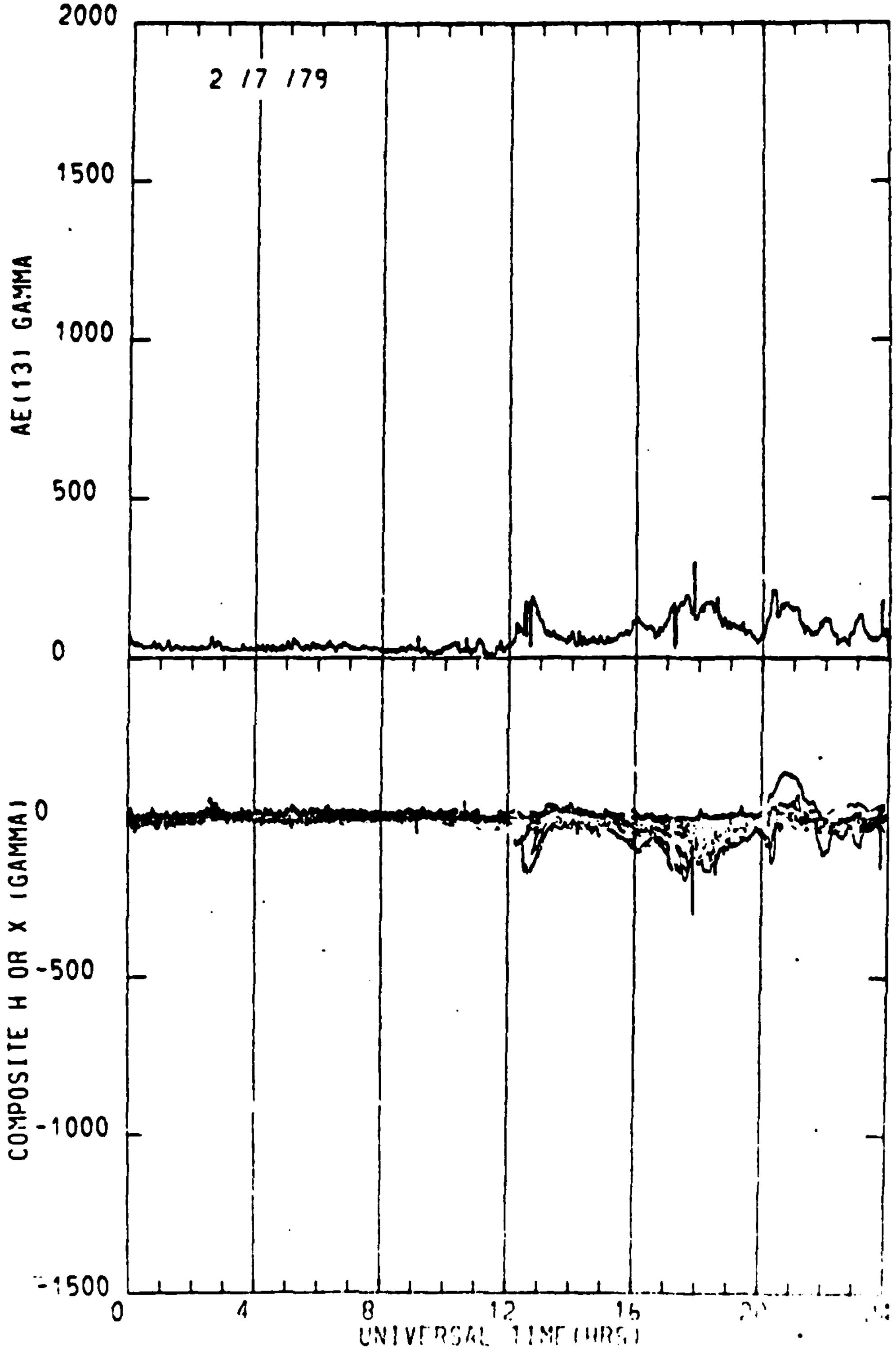
UNIT=GAMMAS G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	6	9	8	6	3	2	-4	-6	-3	-2	-1	0	-3	-8	-10	-10	-11	-9	-10	-8	-3	-3	2	6
2	7	4	0	-2	-7	-10	-12	-13	-10	-3	-2	-3	-1	-4	-2	-1	1	0	-2	3	5	7	7	9
3	8	1	-5	-14	-22	-27	-25	-30	-26	-24	-18	-13	-10	-7	-9	-6	-2	1	0	0	3	5	7	10
4	12	7	1	-9	-20	-27	-27	-31	-35	-29	-26	-27	-31	-37	-41	-48	-44	-36	-34	-34	-37	-35	-33	-27
5	-23	-21	-20	-19	-20	-20	-2[illegible]	-31	-35	-36	-33	-28	-22	-20	-16	-15	-17	-13	-11	-12	-14	-13	-9	-9
6	-11	-16	-12	-5	-6	-6	-5	-5	-2	-3	-2	-2	-1	-1	-2	-3	-3	-2	-4	-5	-5	-8	-8	-6
7	-4	-4	-4	-4	-2	5	7	8	9	8	6	6	8	8	10	13	15	17	17	16	16	16	18	20
8	22	22	21	20	22	30	28	25	26	21	20	18	14	7	3	-1	2	6	5	6	-5	-6	-5	-6
9	-5	-7	-4	-3	-1	2	3	1	1	-1	1	2	-1	1	3	4	4	6	4	2	3	4	2	-3
10	0	4	5	4	3	7	10	9	11	11	12	14	13	11	5	2	-2	2	4	3	5	8	2	2
11	5	5	8	8	4	4	6	12	16	15	13	14	14	15	15	11	7	2	-1	3	2	7	7	6
12	7	8	6	6	5	7	7	4	3	3	5	5	4	5	4	3	2	5	8	8	7	9	10	9
13	10	12	16	15	13	11	12	16	17	13	10	8	8	7	7	9	8	13	17	14	11	9	12	11
14	4	1	4	7	10	13	13	12	12	14	18	18	19	19	20	18	19	17	12	11	7	8	7	7
15	7	8	6	4	0	1	4	0	-6	-5	-7	-2	1	3	3	3	2	1	-3	-8	-11	-10	-8	-8
16	-14	-14	-9	-7	-12	-15	-16	-10	-7	-5	-3	0	9	11	6	1	3	8	4	4	5	5	1	-4
17	-8	-11	-11	-12	-10	-8	-7	-5	-3	-2	1	3	3	-1	-2	-3	-2	-7	-12	-11	-7	-8	-11	-9
18	-6	-4	-6	-7	-8	-9	-8	-12	-10	-8	-6	-2	2	0	-5	-5	-4	-2	1	4	4	-1	-2	-2
19	-2	-1	-3	-6	-7	-7	-5	-8	-12	-11	-8	-2	1	2	2	0	-2	-3	-2	0	0	-2	-3	-1
20	1	1	-1	-2	-3	-2	1	-2	-3	-1	0	2	1	0	3	1	-1	-1	-3	-9	-11	-11	-11	-8
21	-6	-5	-6	-7	-5	-3	-3	-3	-3	-3	-2	1	1	-1	-2	-2	-6	-10	-11	-11	-8	-8	-9	-7
22	-4	-2	-2	-1	7	10	11	11	12	11	9	5	14	9	4	4	3	-7	-14	-6	0	2	5	6
23	5	5	7	7	5	3	0	-2	-1	2	3	7	5	1	1	2	3	4	8	11	14	13	13	11
24	6	1	3	3	3	5	10	13	16	16	15	14	15	11	8	3	-1	1	7	10	11	9	7	7
25	10	10	8	8	8	10	14	18	19	20	21	20	23	28	30	31	28	25	18	16	20	20	16	13
26	15	14	10	16	20	19	22	24	24	24	24	19	17	19	20	22	15	7	1	-6	-11	-10	-9	-5
27	-1	0	0	2	9	-2	-1	0	-1	2	3	4	1	-1	-7	-14	-14	-9	-7	-8	-8	-6	-9	-11
28	-10	-7	-8	-13	-19	-20	-17	-11	-5	-5	-4	-5	-7	-7	-1	-4	-12	-11	-9	-11	-10	-14	-18	-24
29	-32	-32	-33	-37	-36	-36	-40	-41	-32	-31	-28	-22	-16	-24	-32	-38	-40	-41	-42	-35	-26	-26	-30	-31
30	-33	-34	-32	-35	-38	-38	-37	-38	-33	-30	-30	-23	-15	-18	-22	-18	-18	-19	-18	-11	-11	-9	-9	-7
31	-5	-6	-8	-8	-4	-8	-15	-15	-17	-17	-14	-9	-8	-11	-8	-5	-6	-7	-9	-17	-25	-33	-43	-38

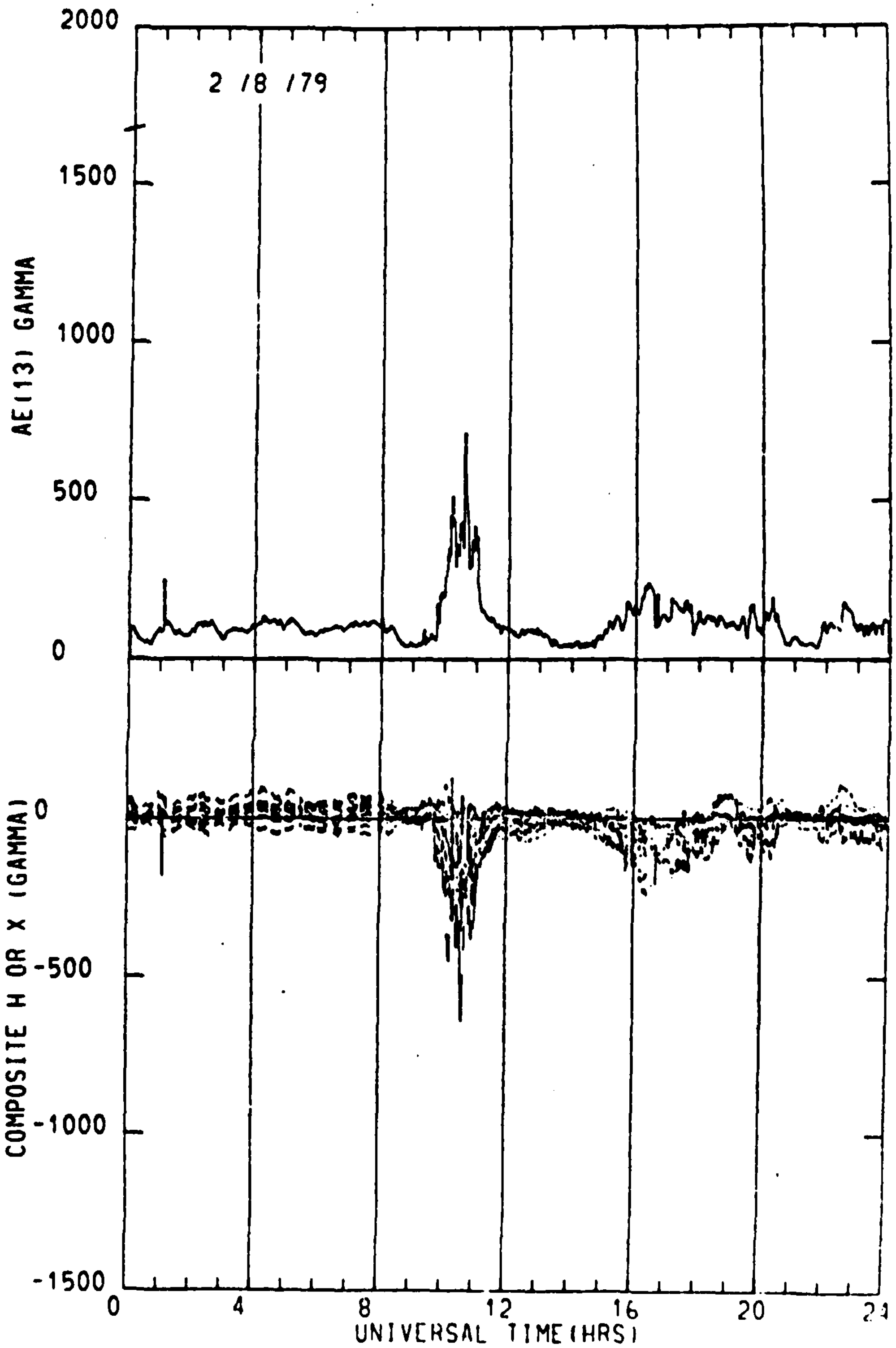


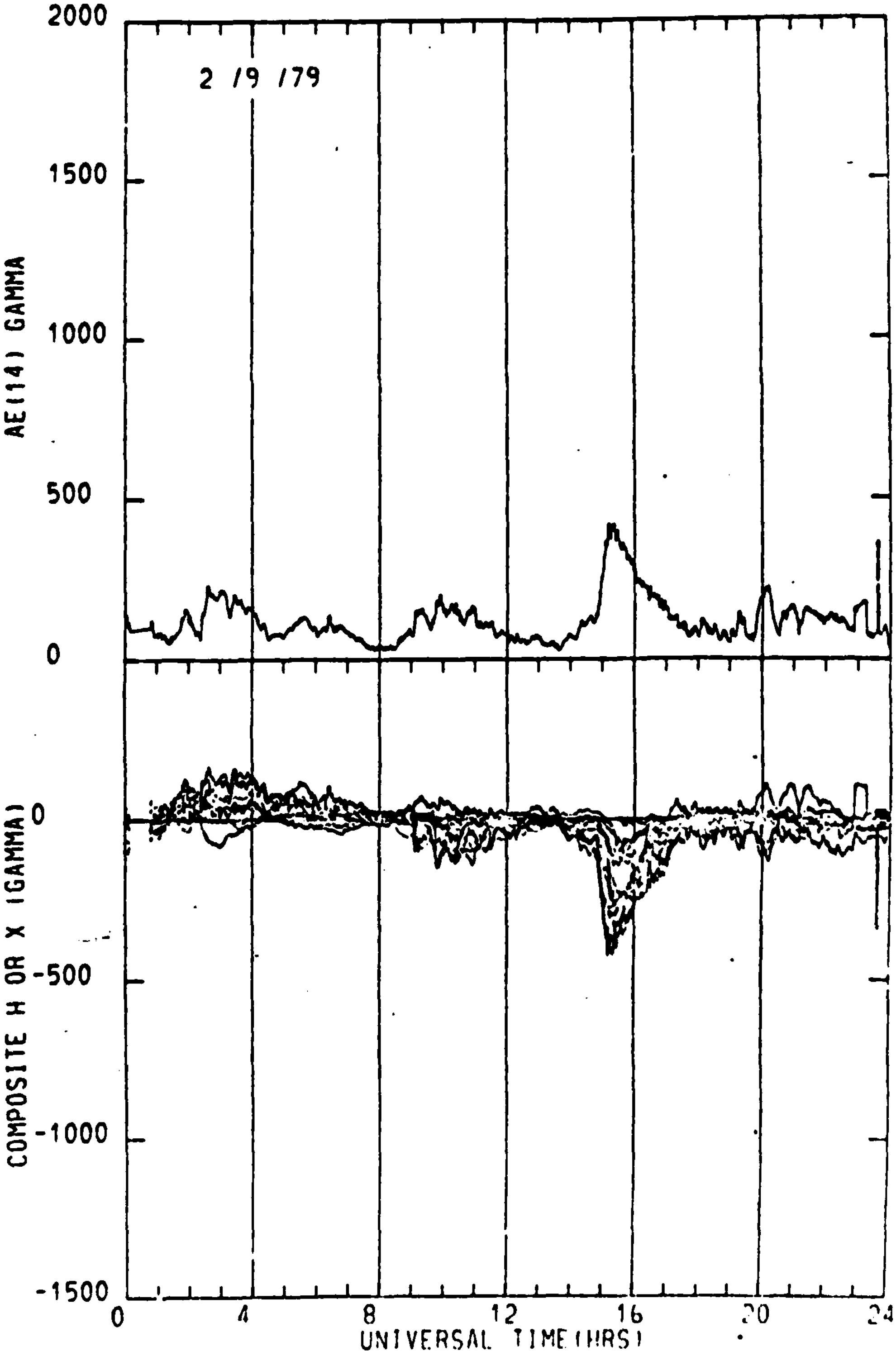
APPENDIX 2

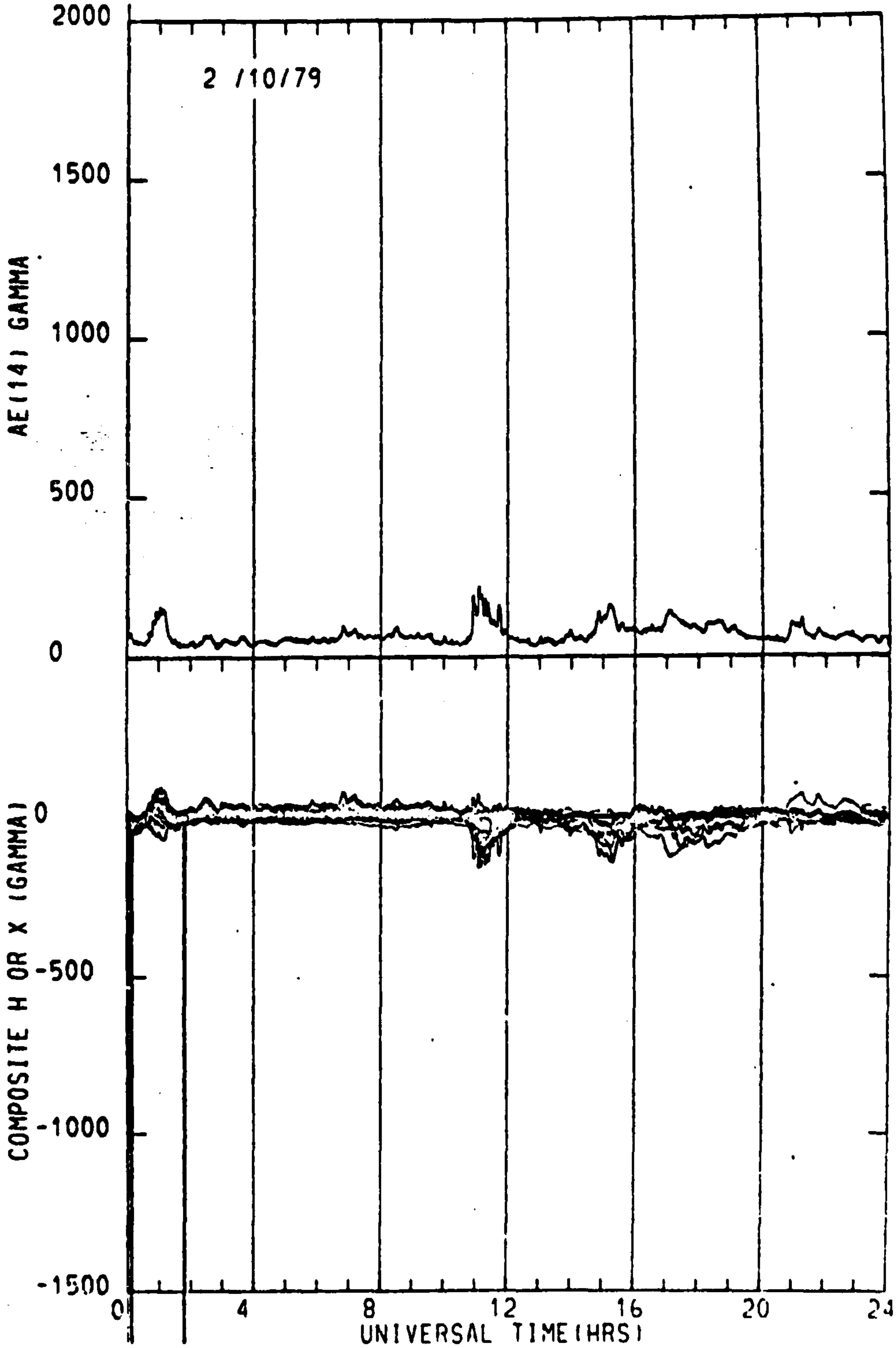
DAILY GRAPHS OF 1.0 MIN. AURORAL ELECTROJET INDICES

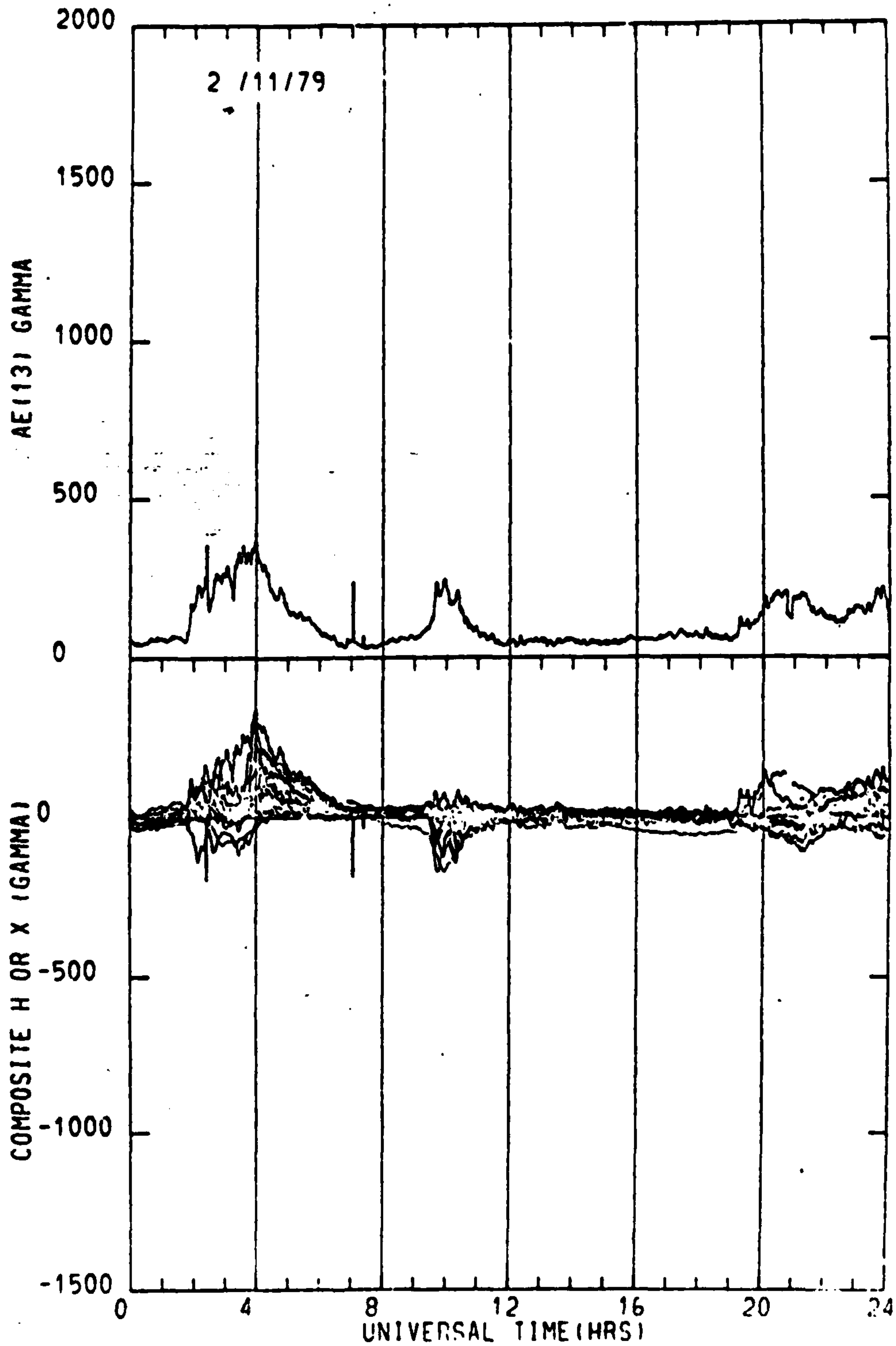


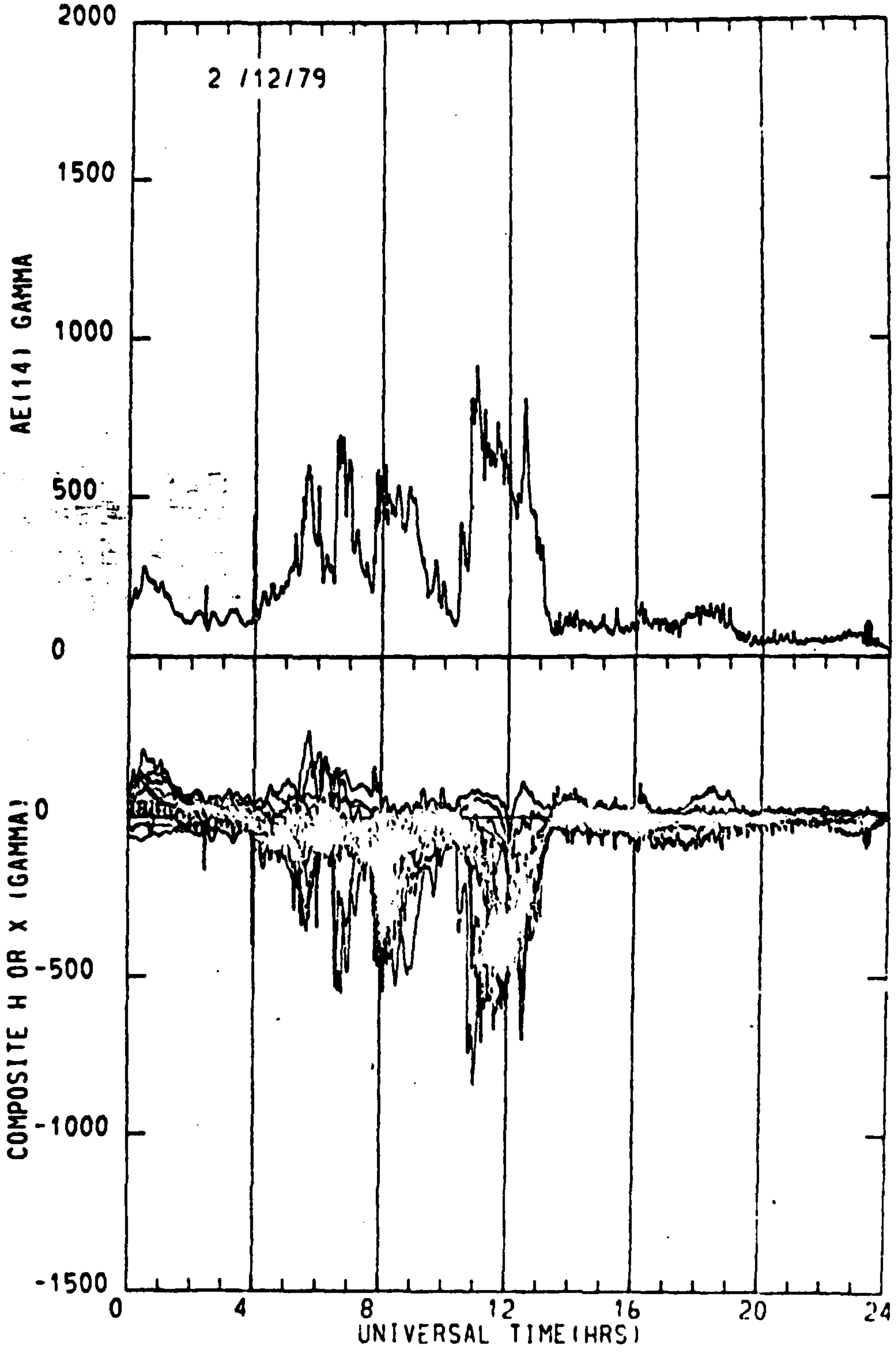
2 /7 /79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
UNIVERSAL TIME(HRS)


2 /8 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


2000
2 /9 /79
1500
AE(14) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

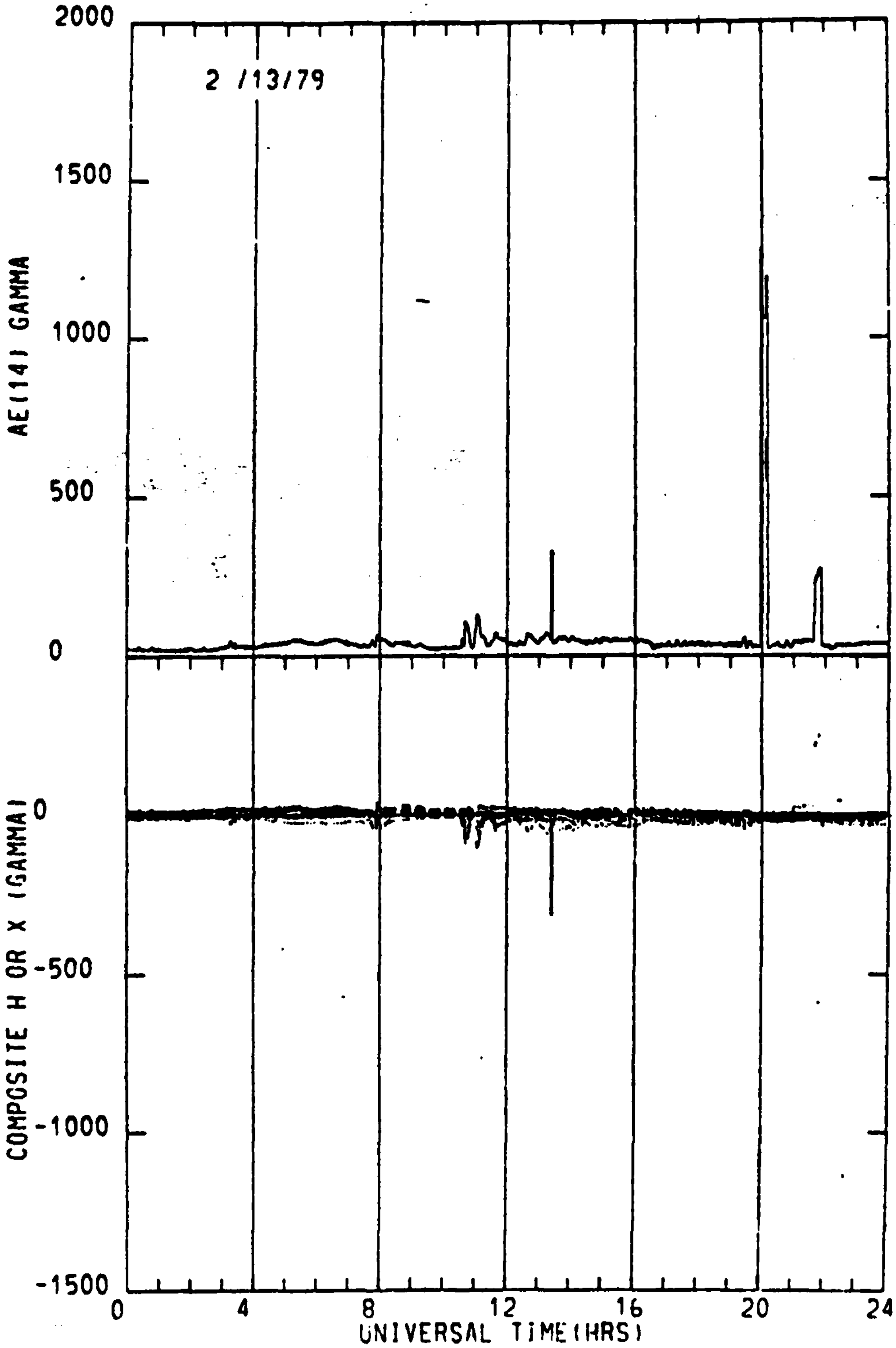

2 /10/79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

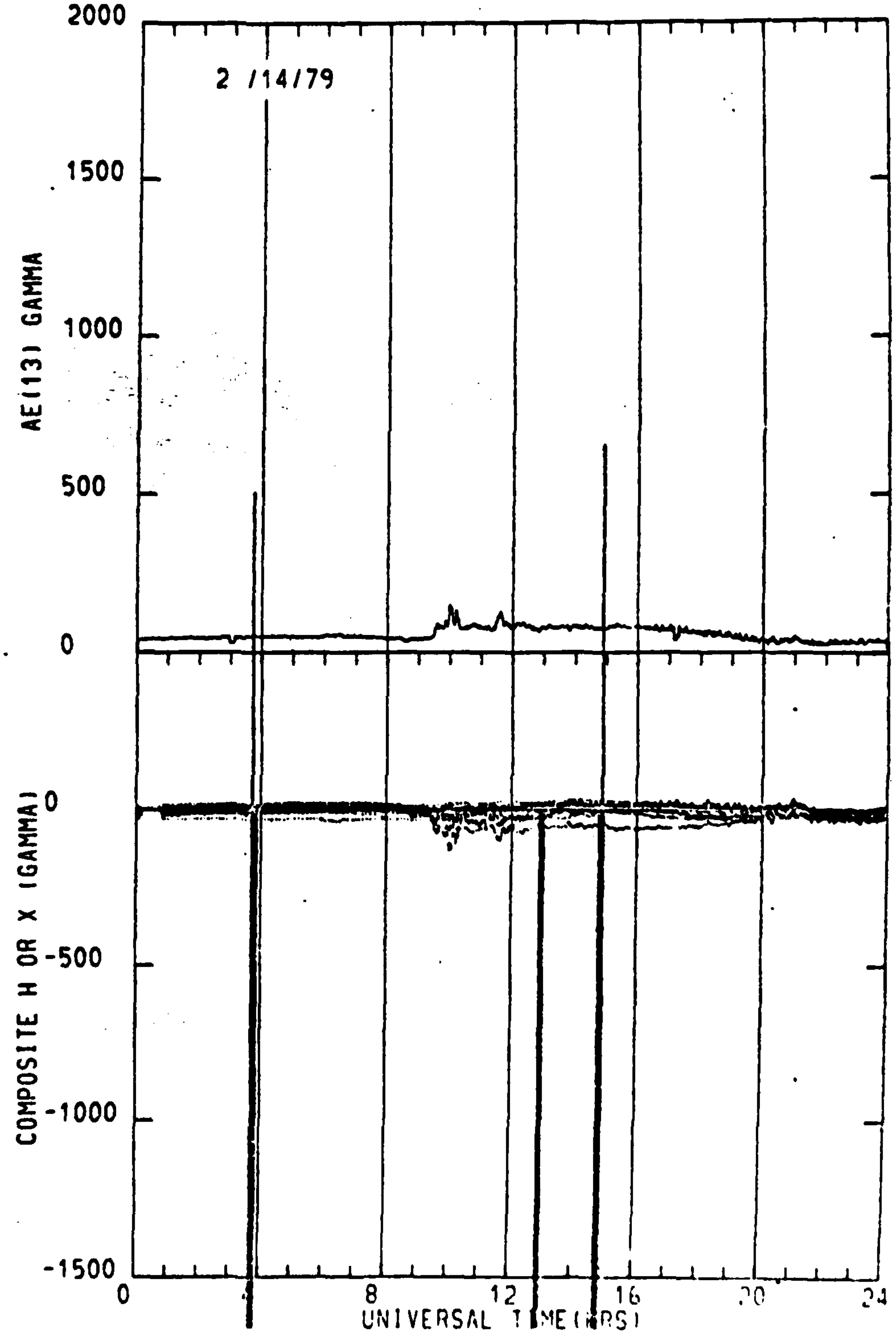

2 /11/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

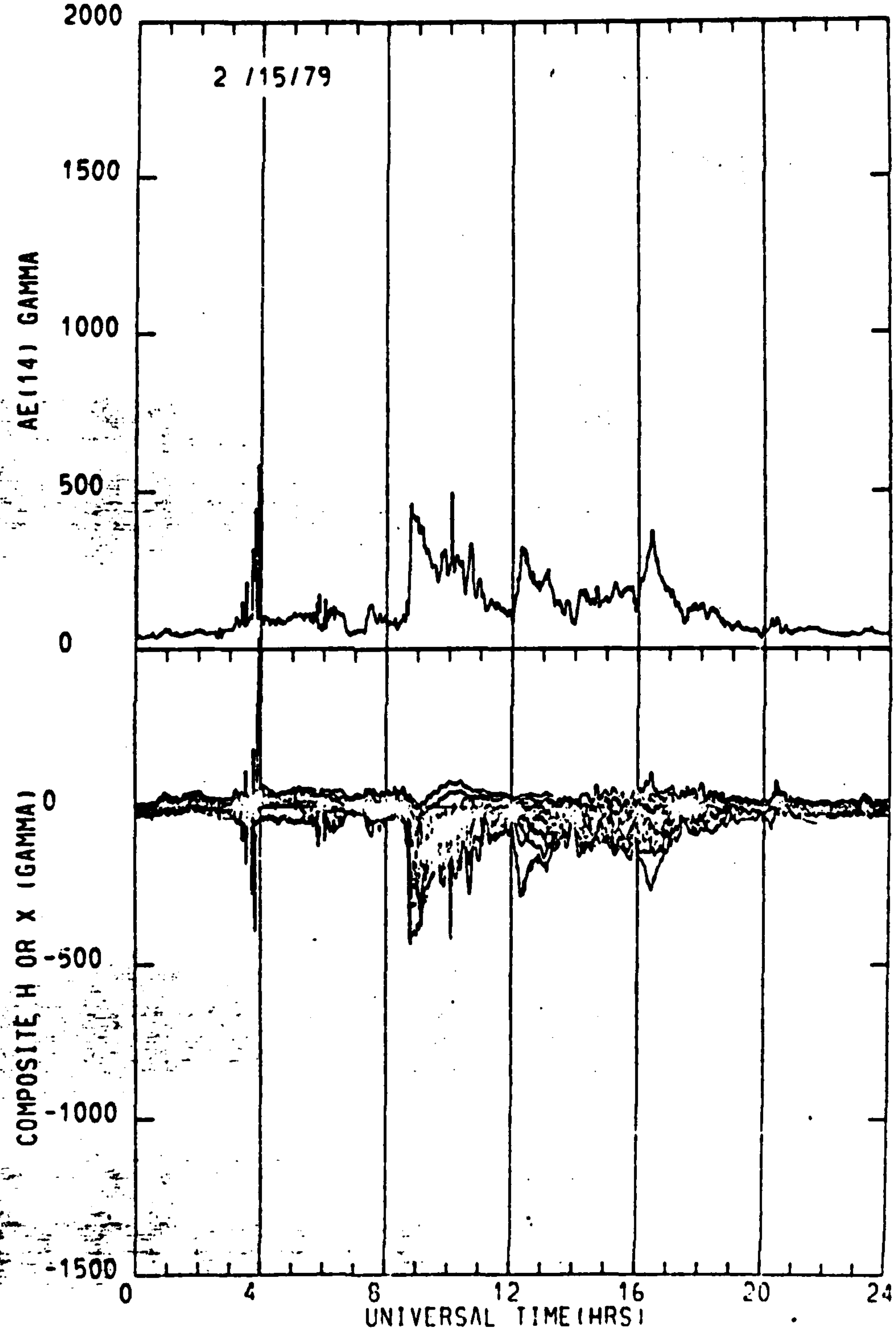


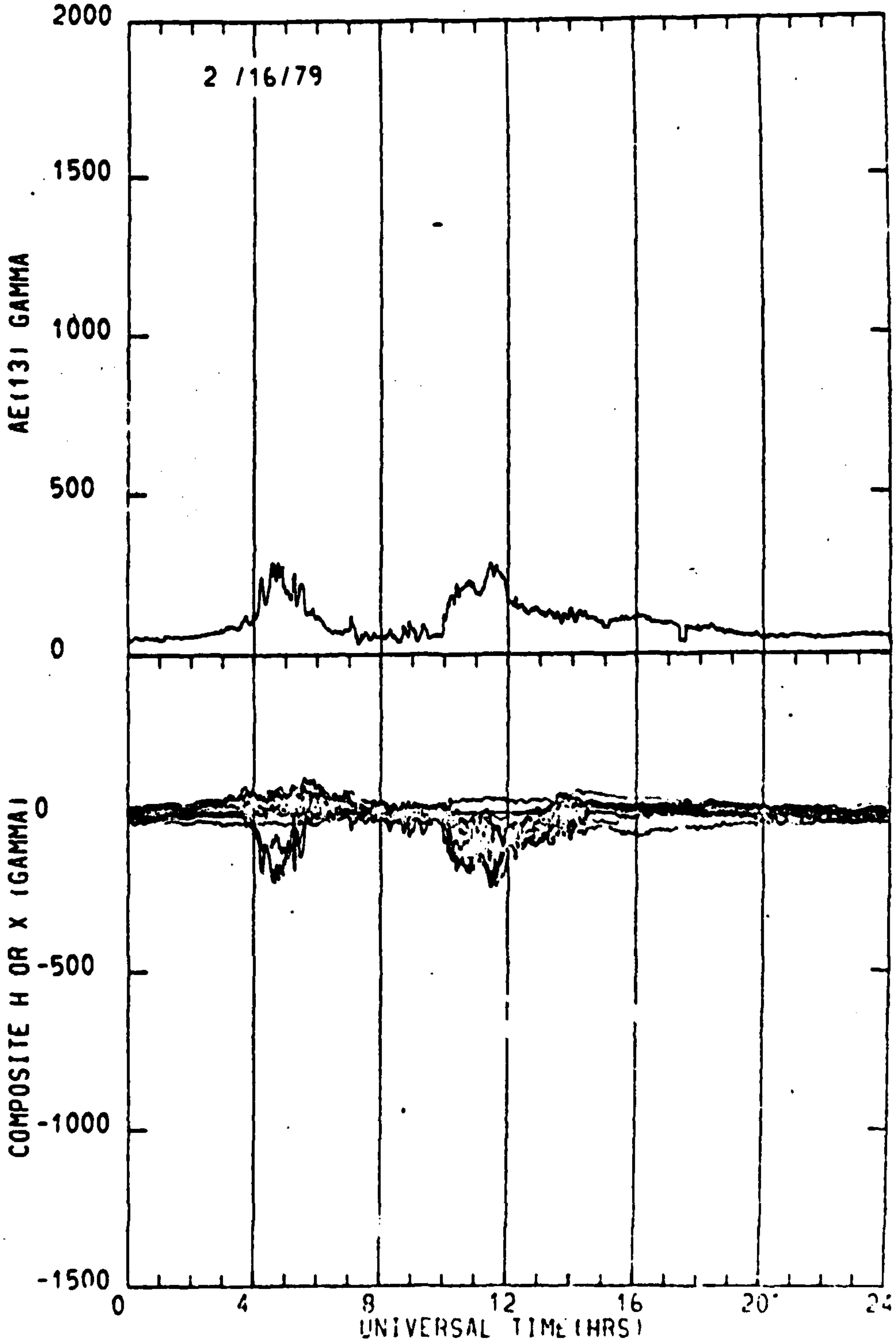
2 /12/79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

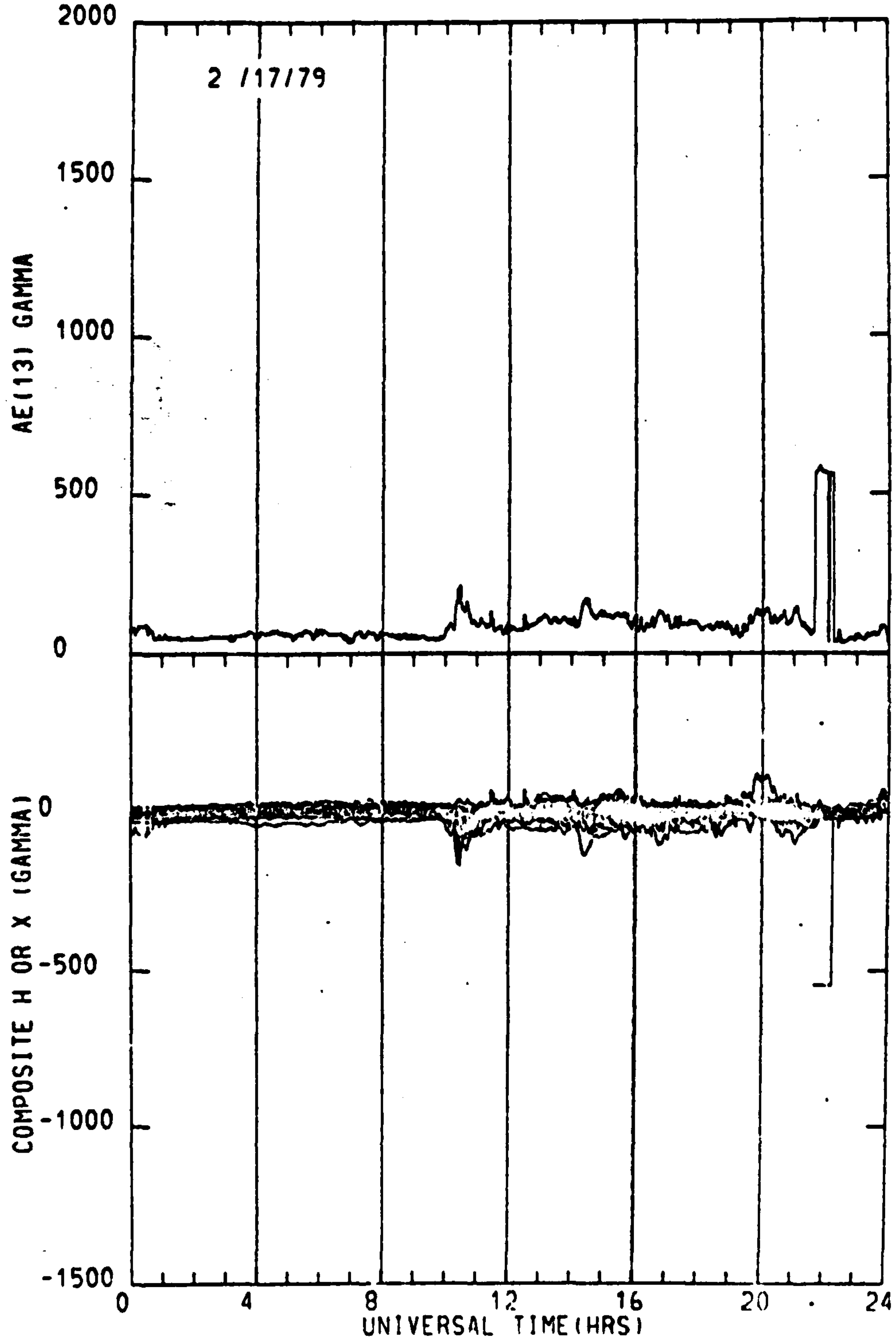
2000

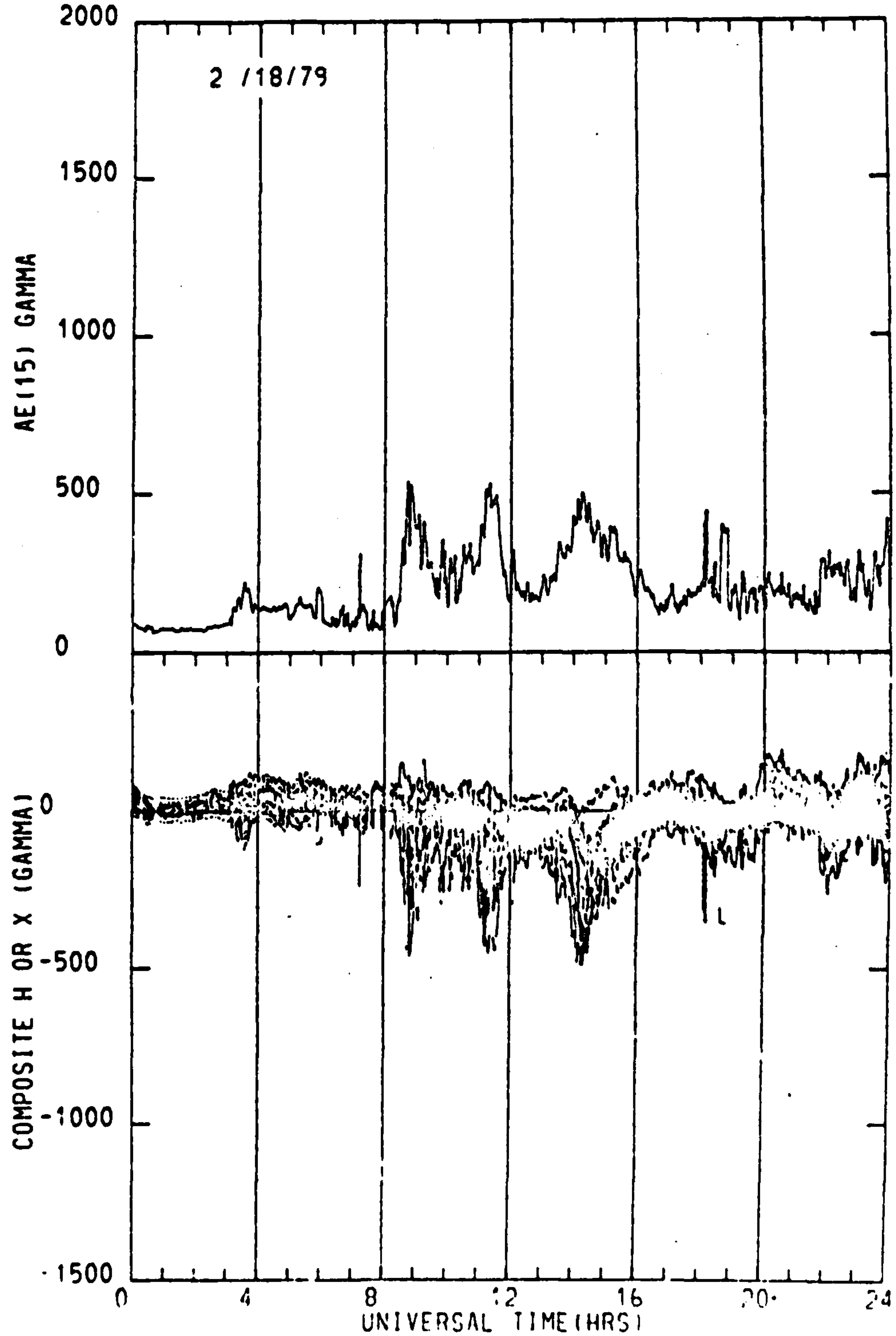

2 /13/79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

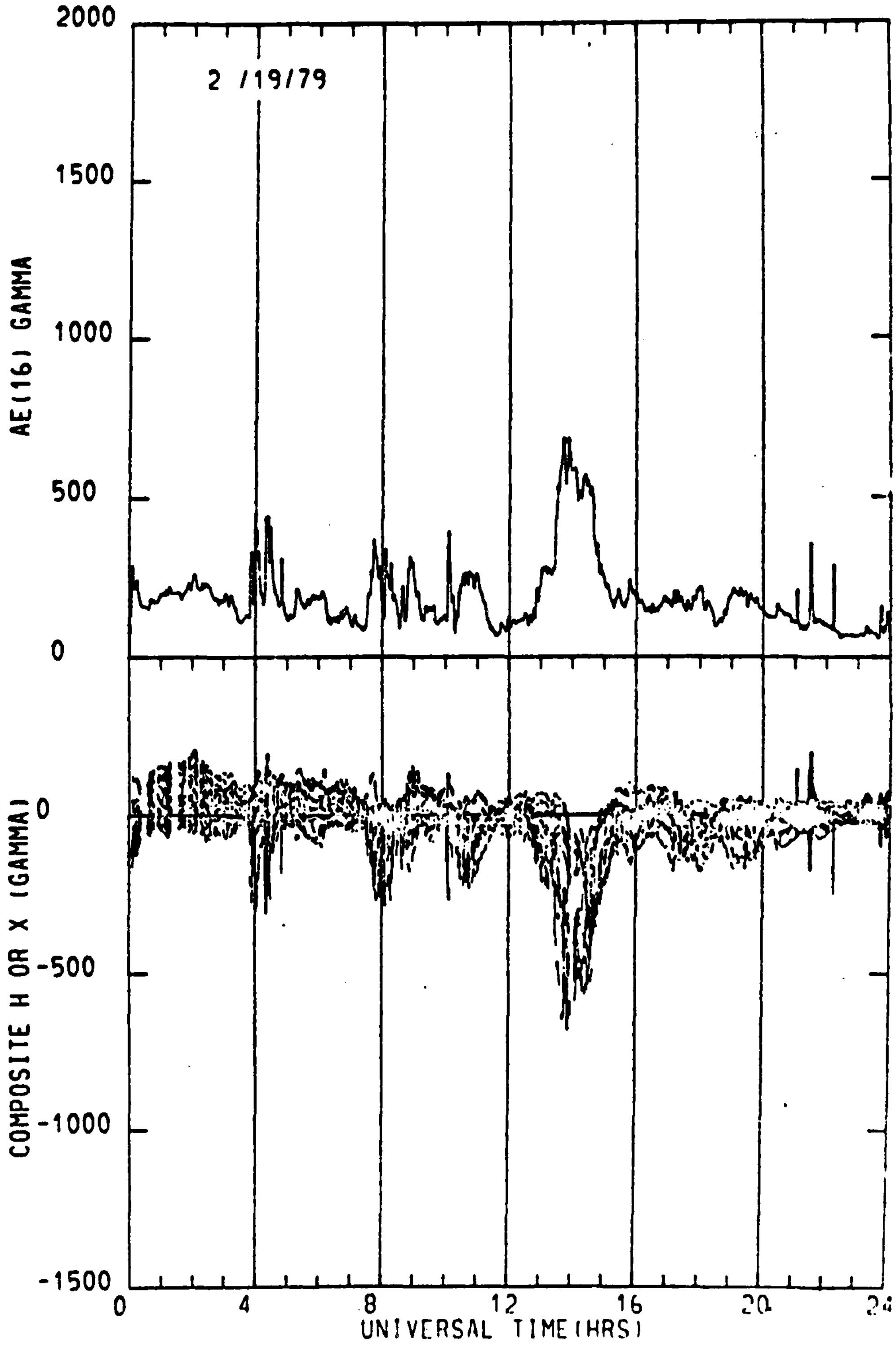

2 /14/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
8
12
16
24
UNIVERSAL TIME(HRS)

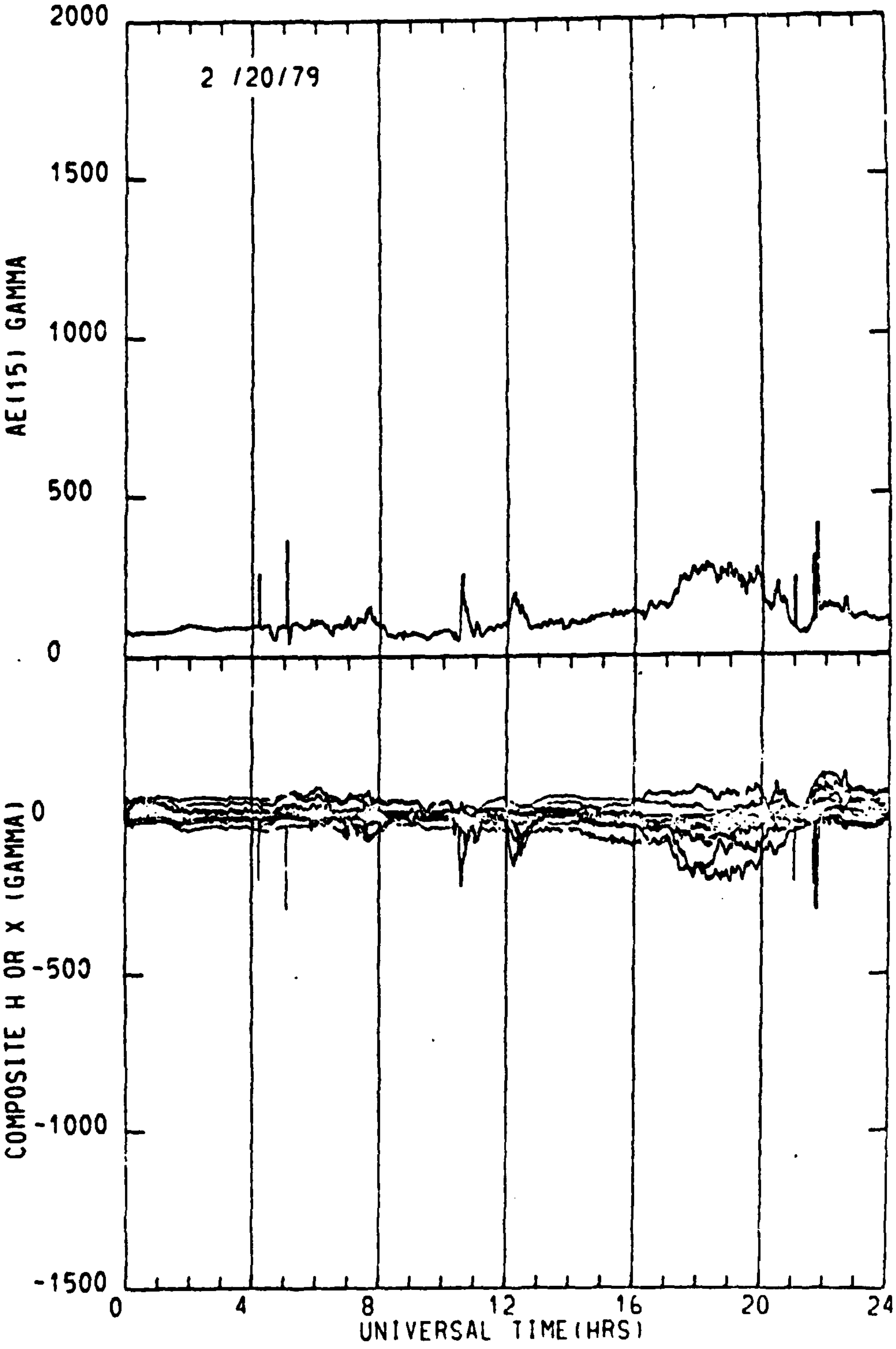

2 /15/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

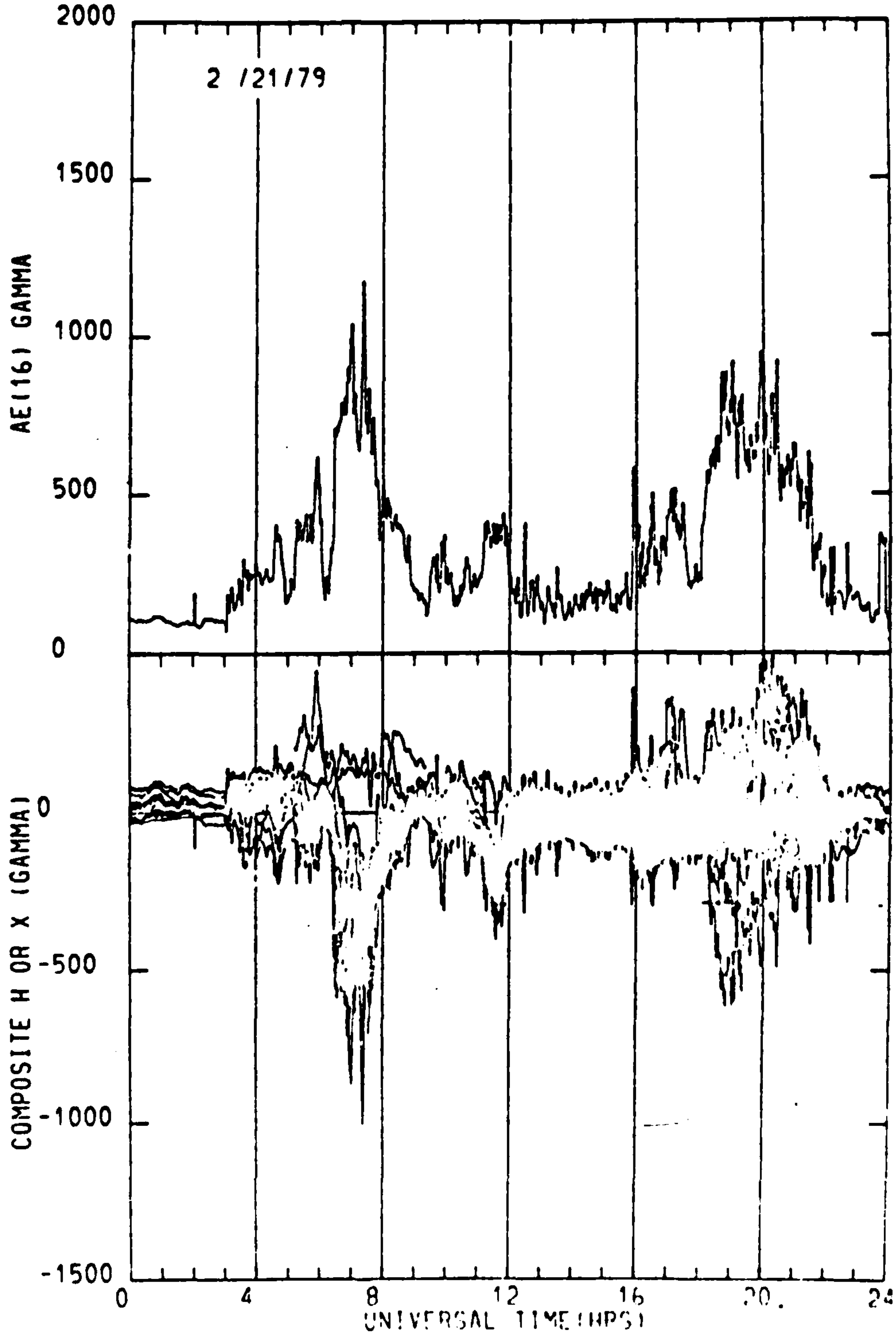

2000
2 /16/79
1500
AE(13) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

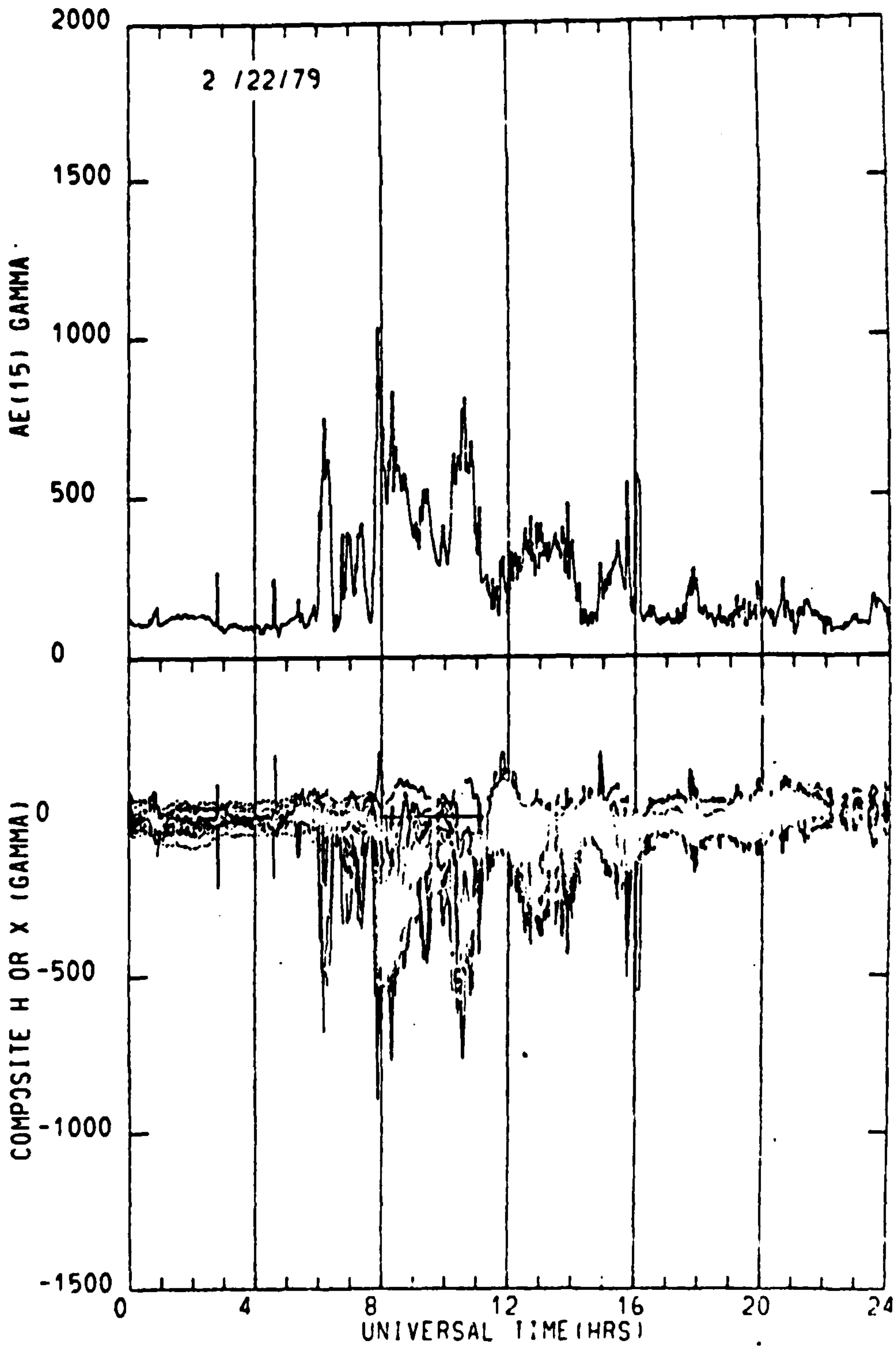

2 /17/79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

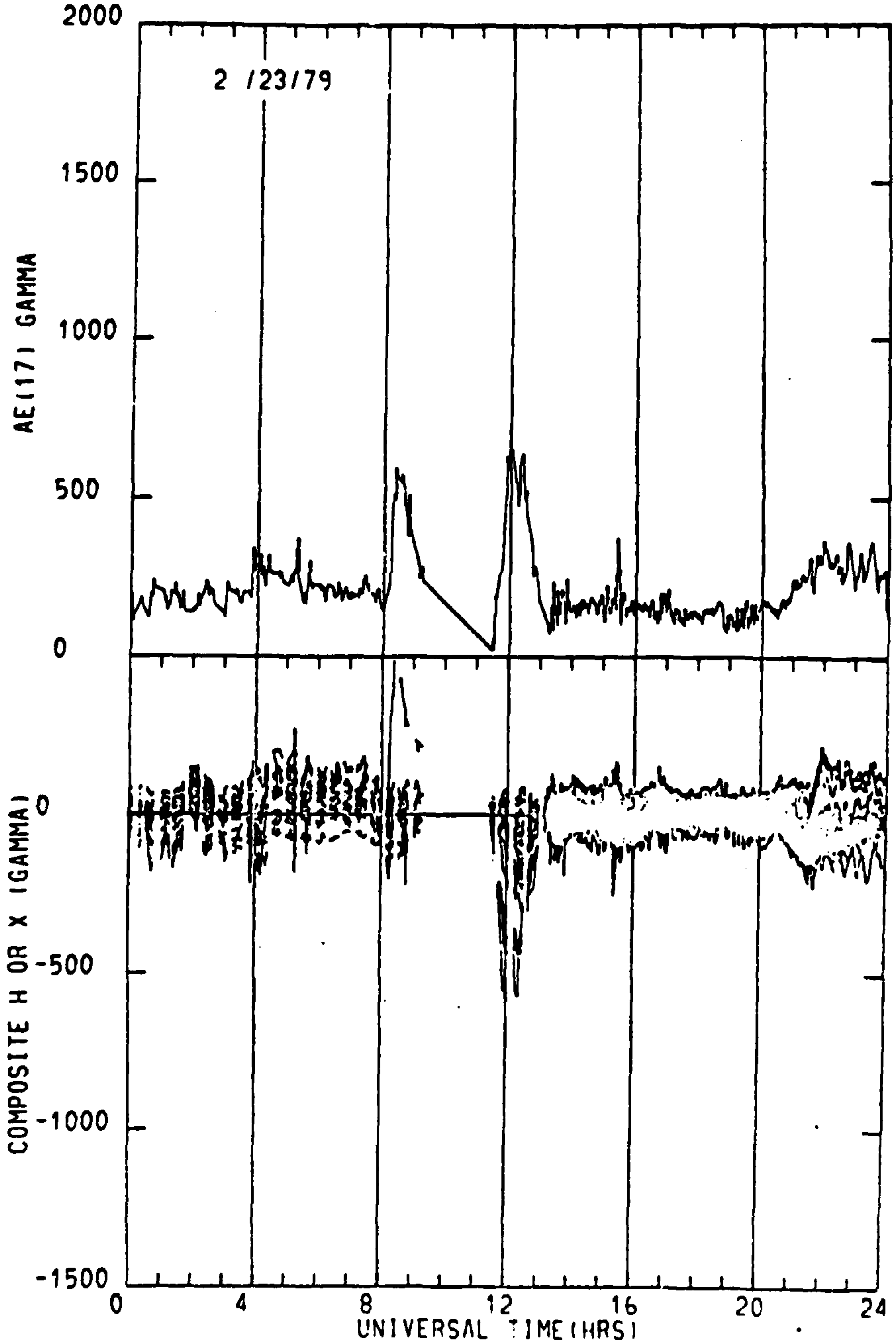

2 /18/79
AE(15) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

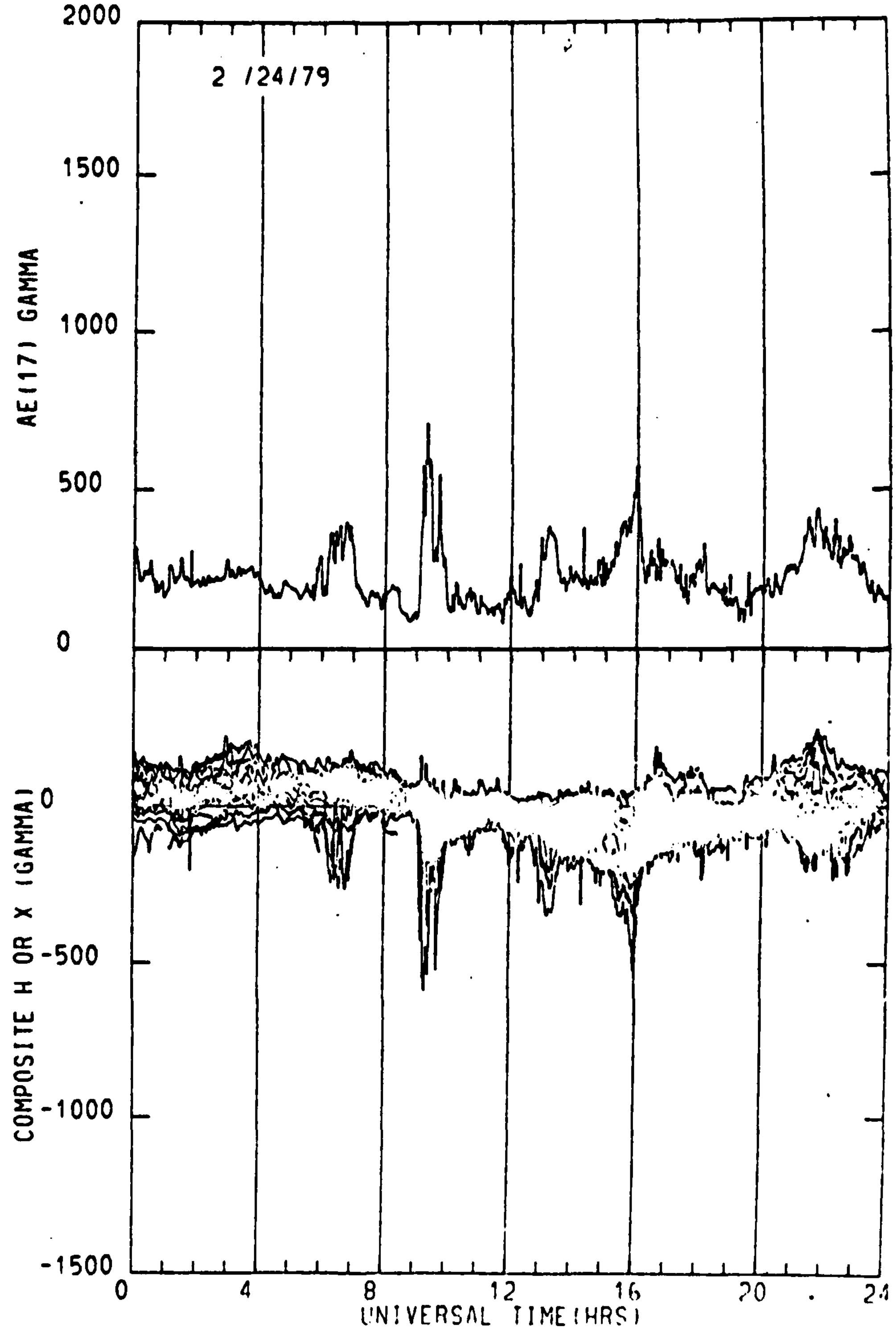

2 /19/79
2000
1500
1000
500
0
AE(16) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

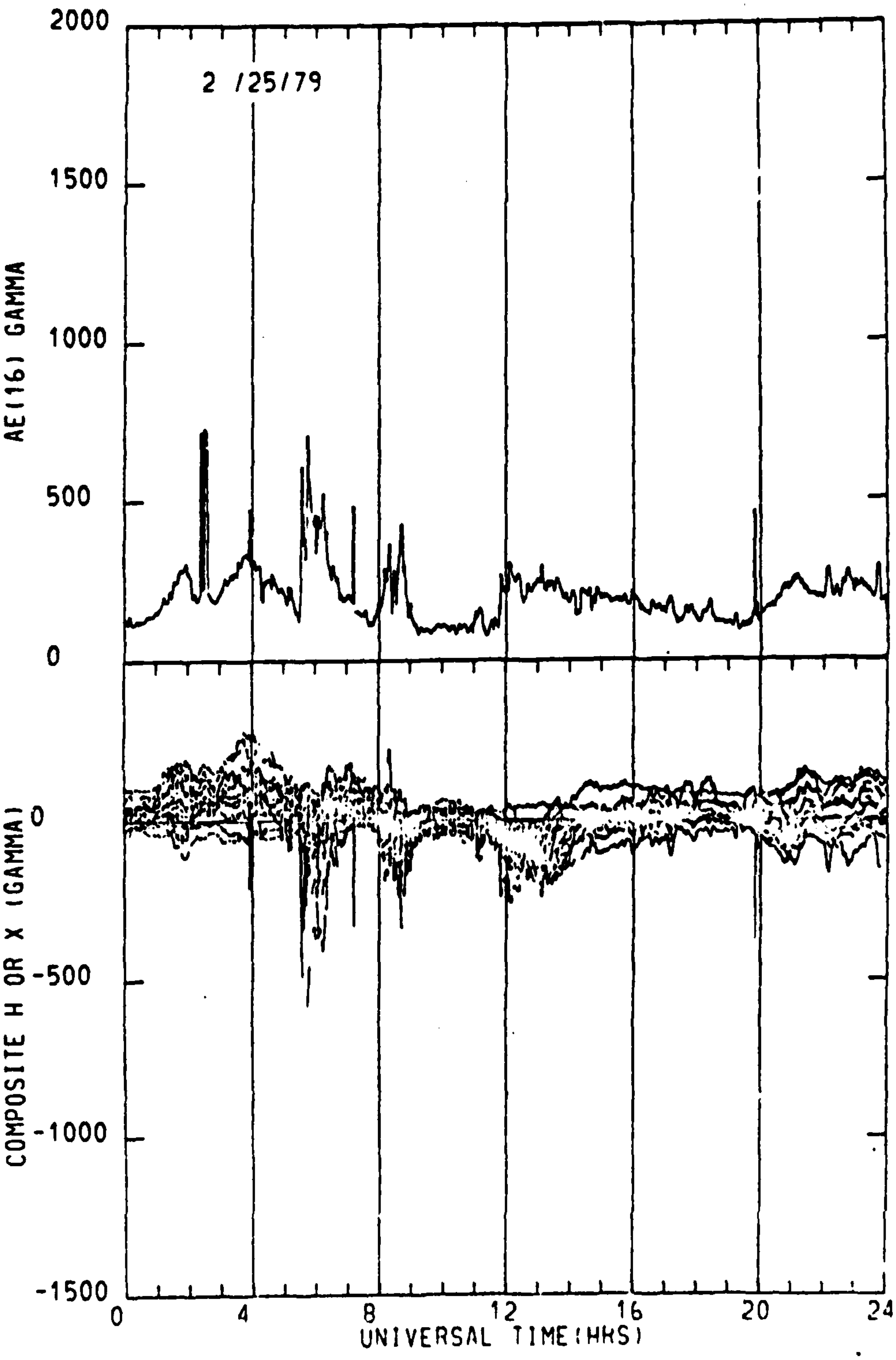

2 /20/79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

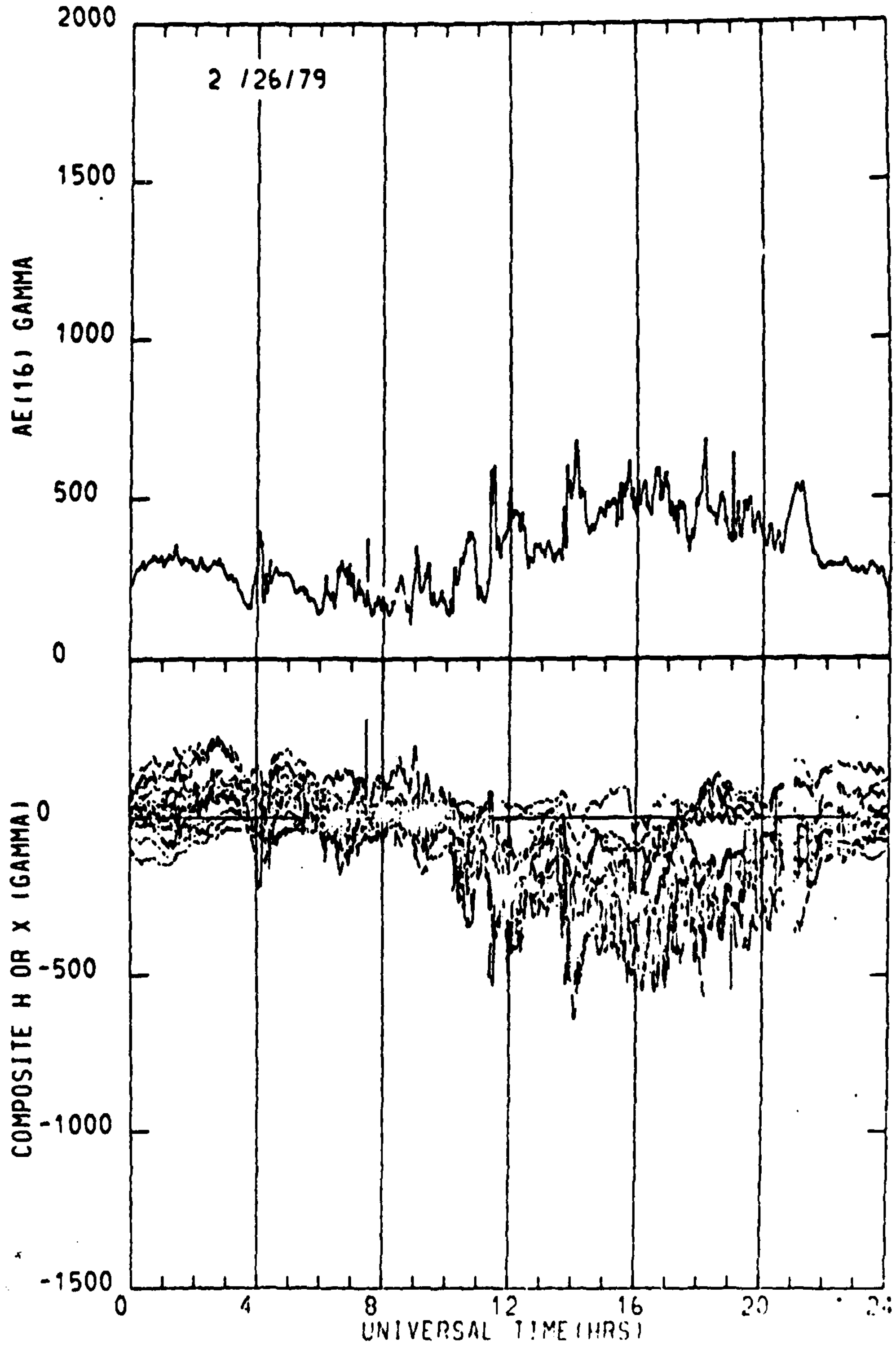

2 /21/79
AE(16) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
24


2 /22/79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

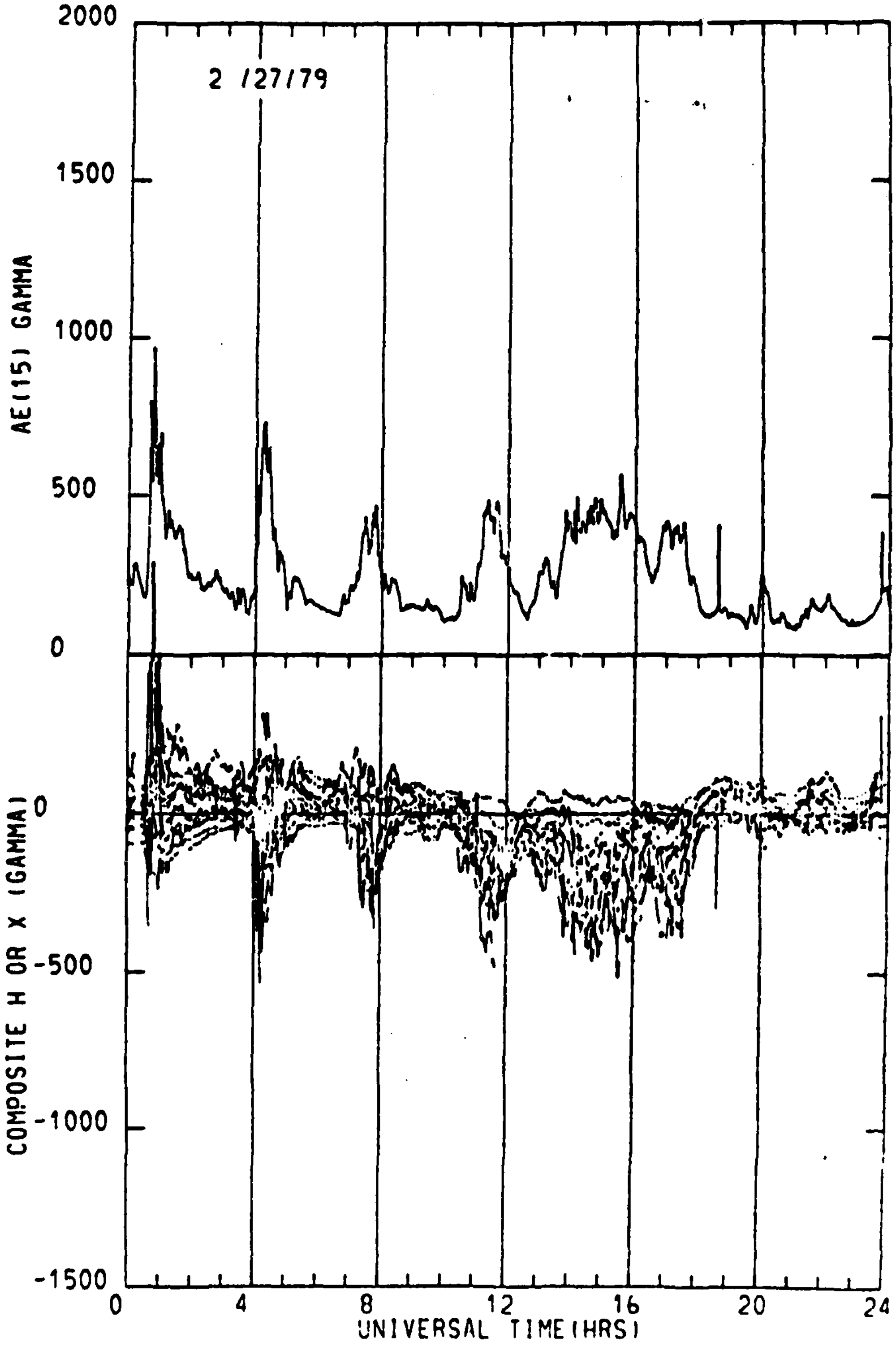

2 /23/79
2000
1500
1000
500
0
AE(17) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

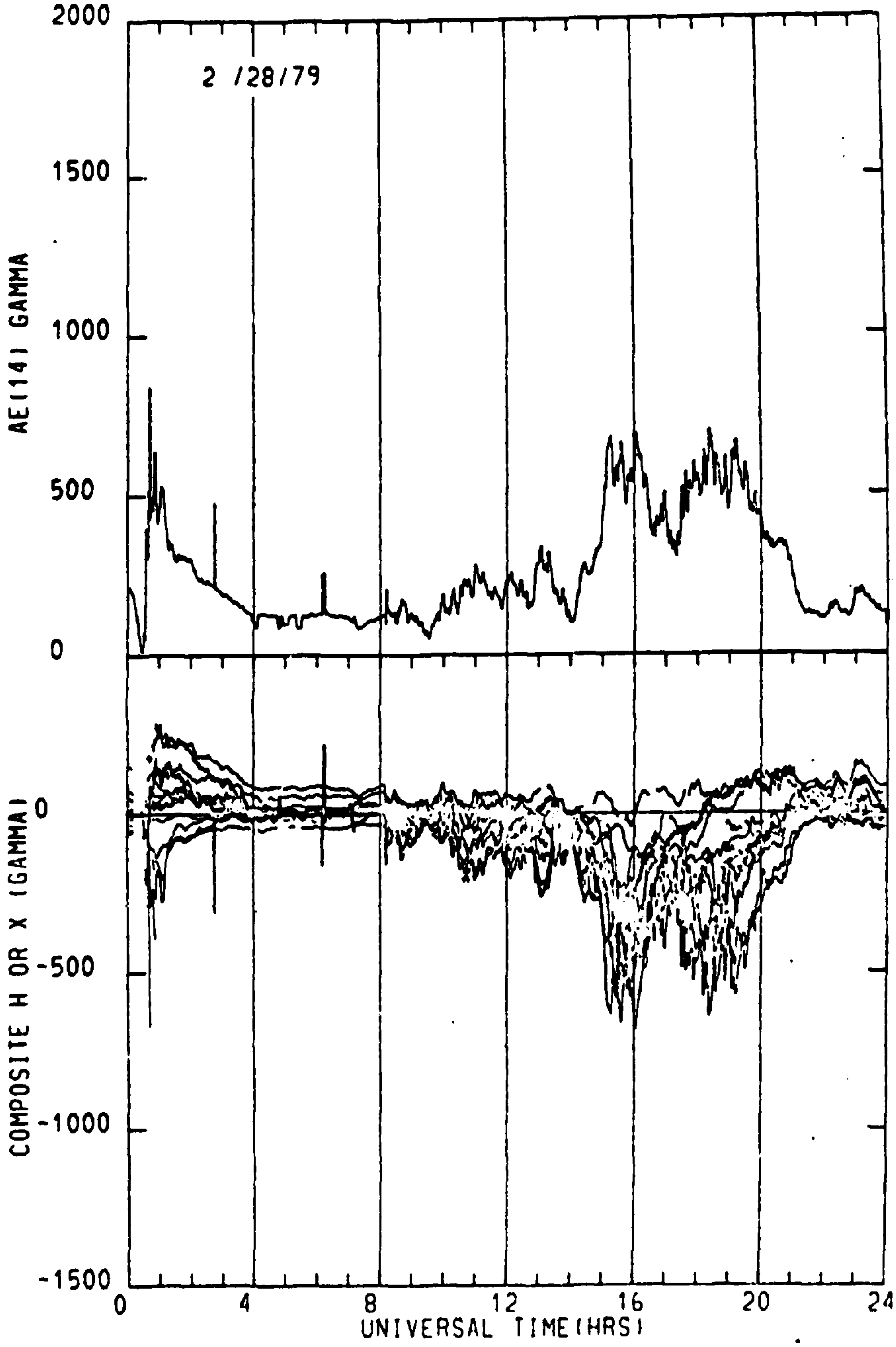

2 /24/79
AE(17) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

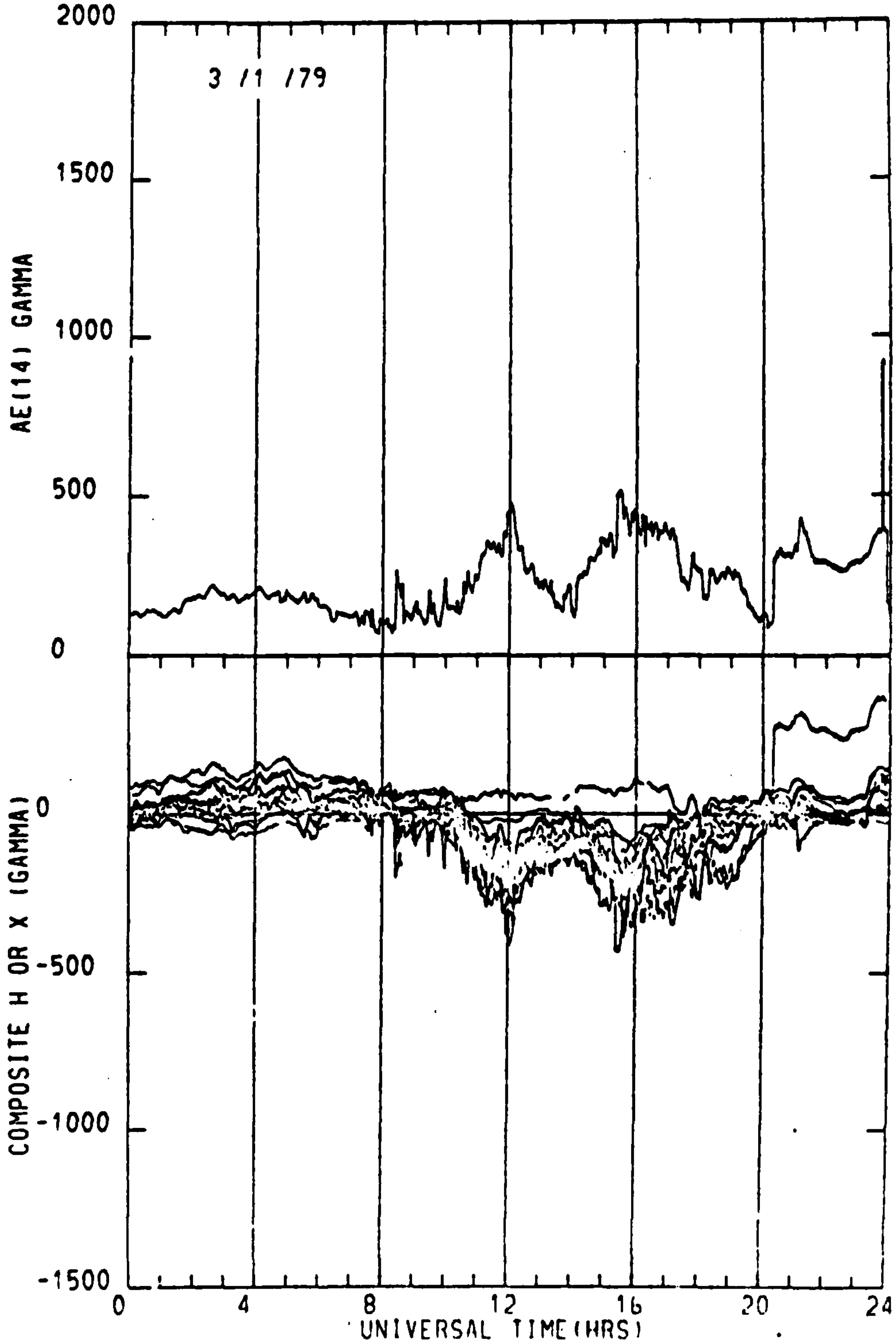

2 /25/79
AE(16) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



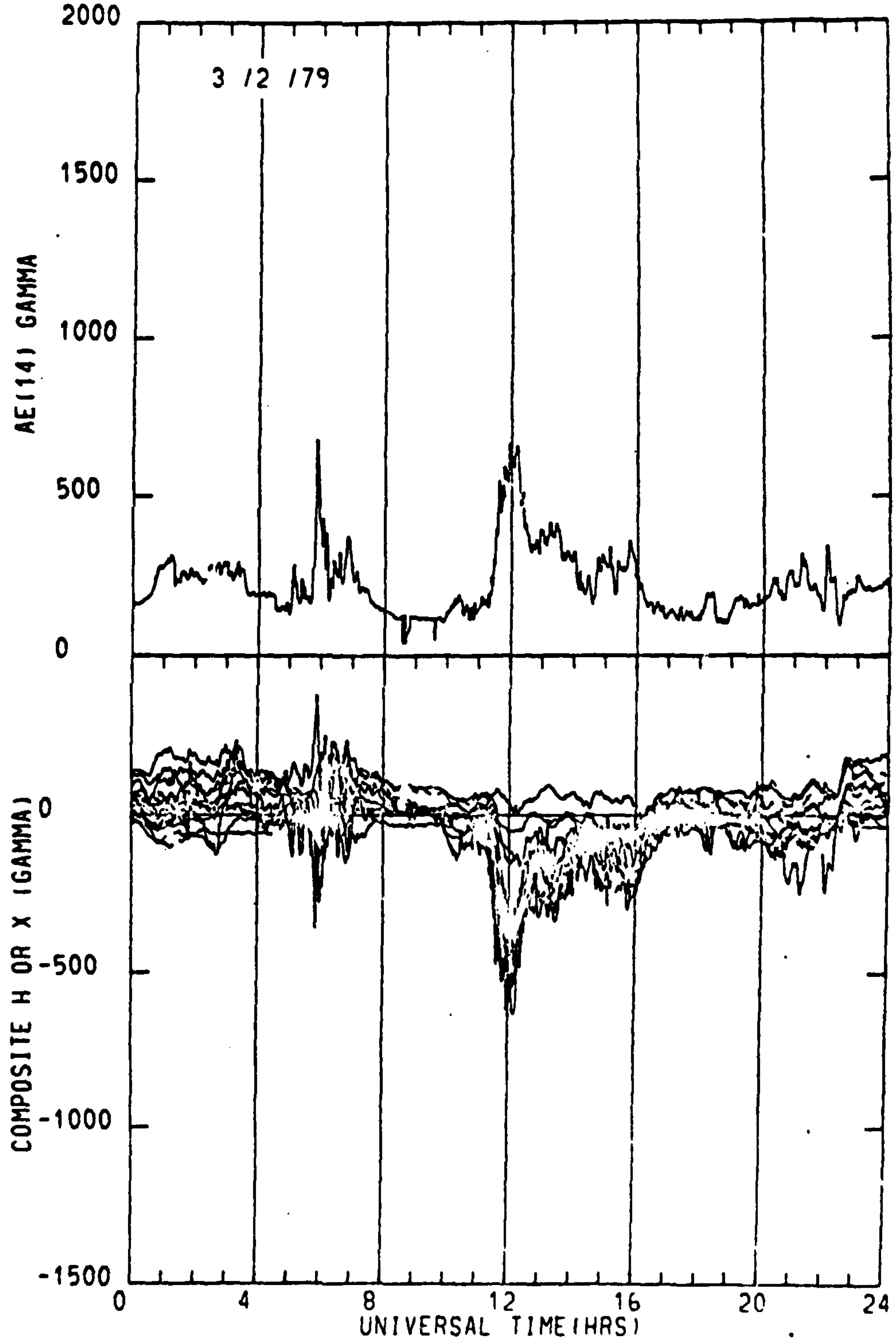
2 /26/79
2000
1500
1000
500
0
AE(16) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

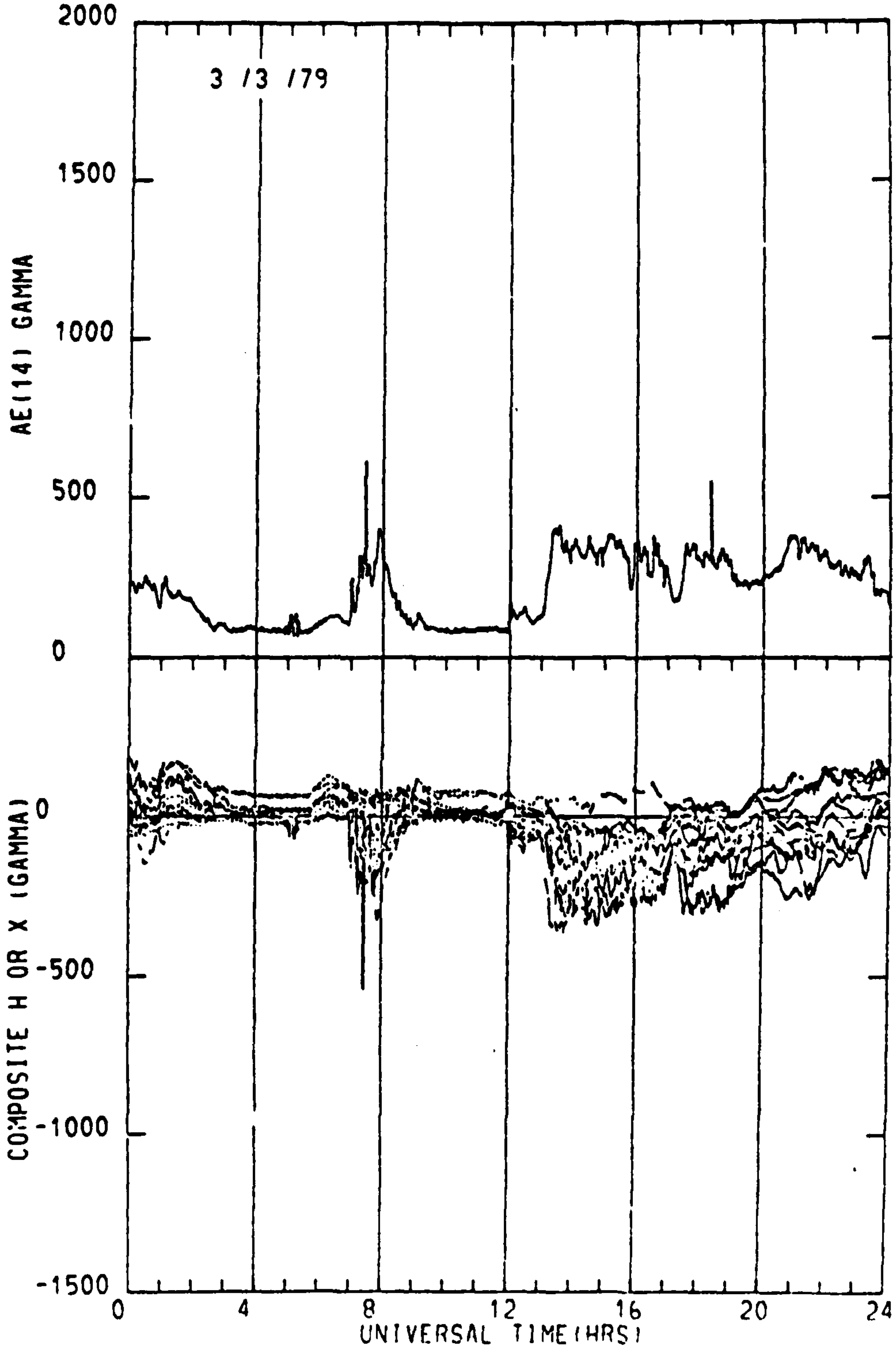

2 /27/79
AE(15) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

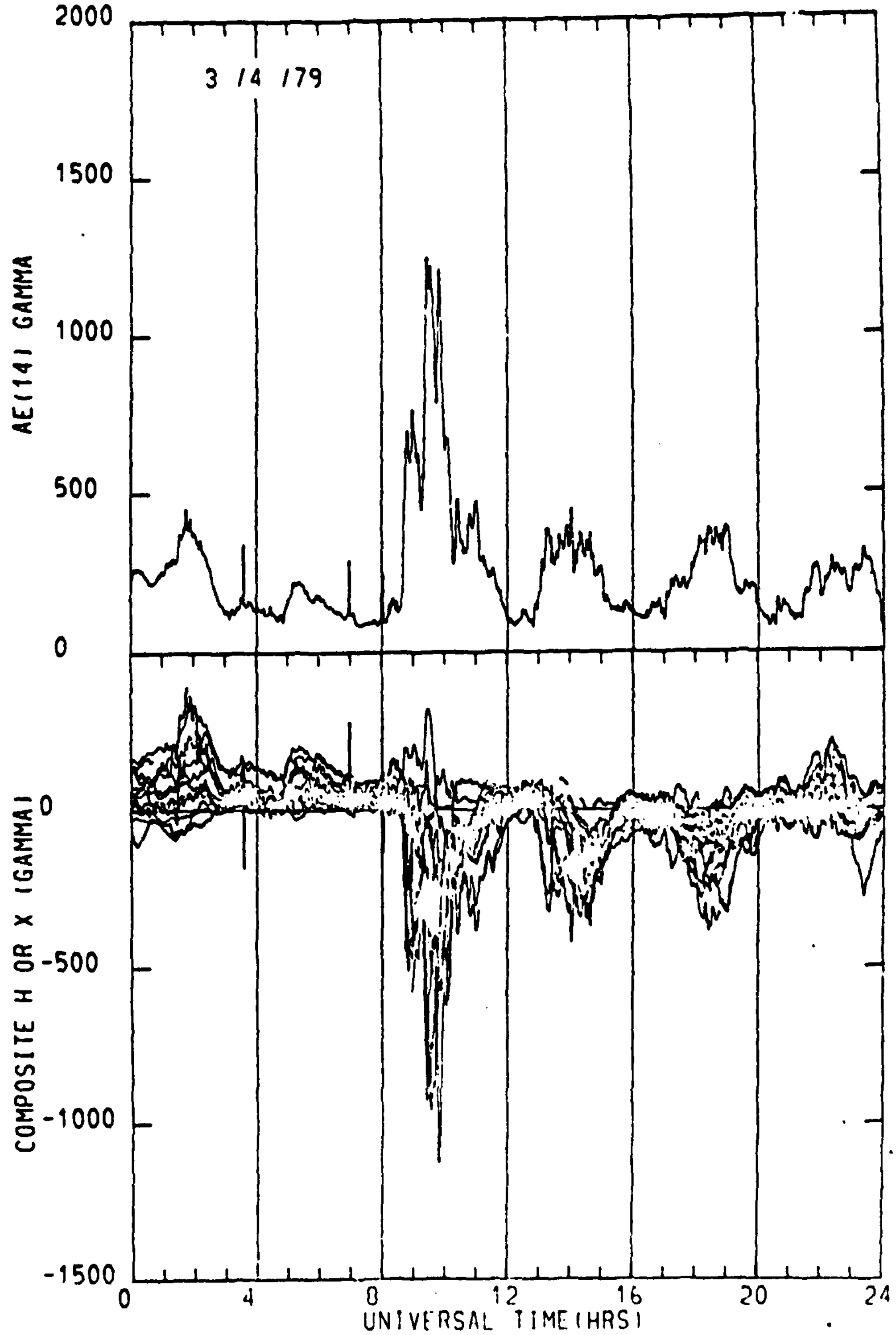

2 /28/79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



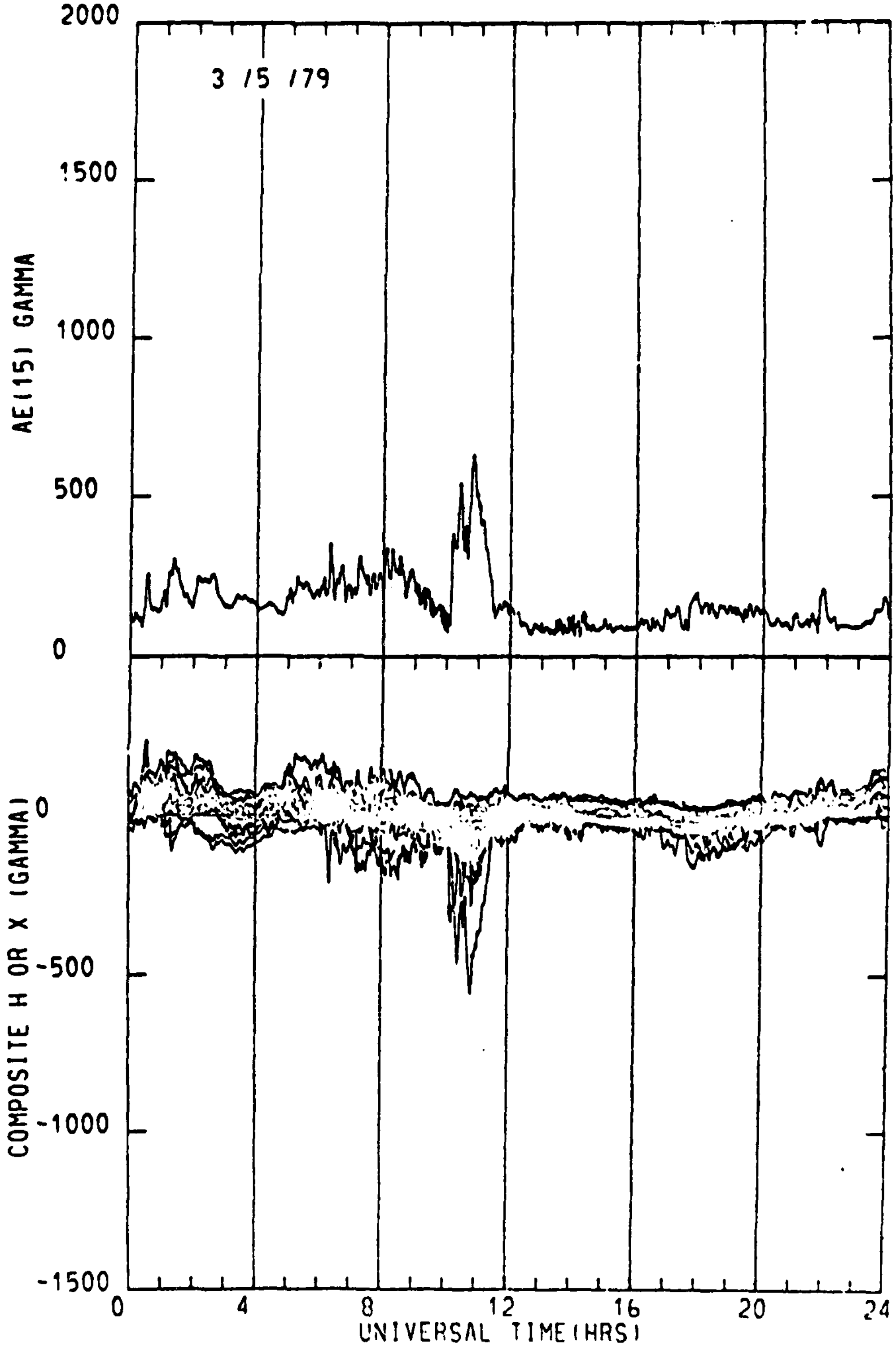
2000
3 /1 /79
1500
AE(14) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

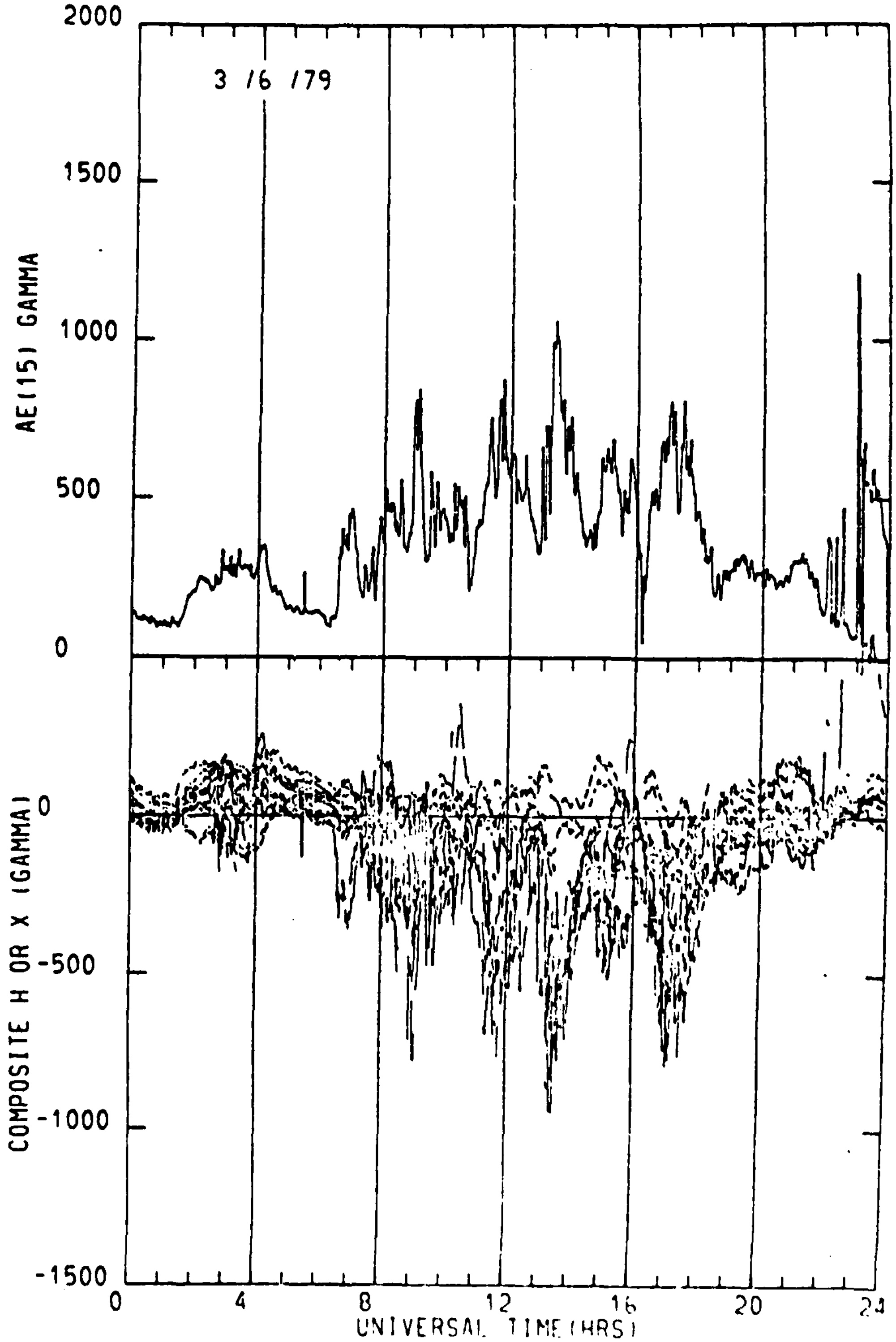

3 /2 /79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


3 /3 /79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



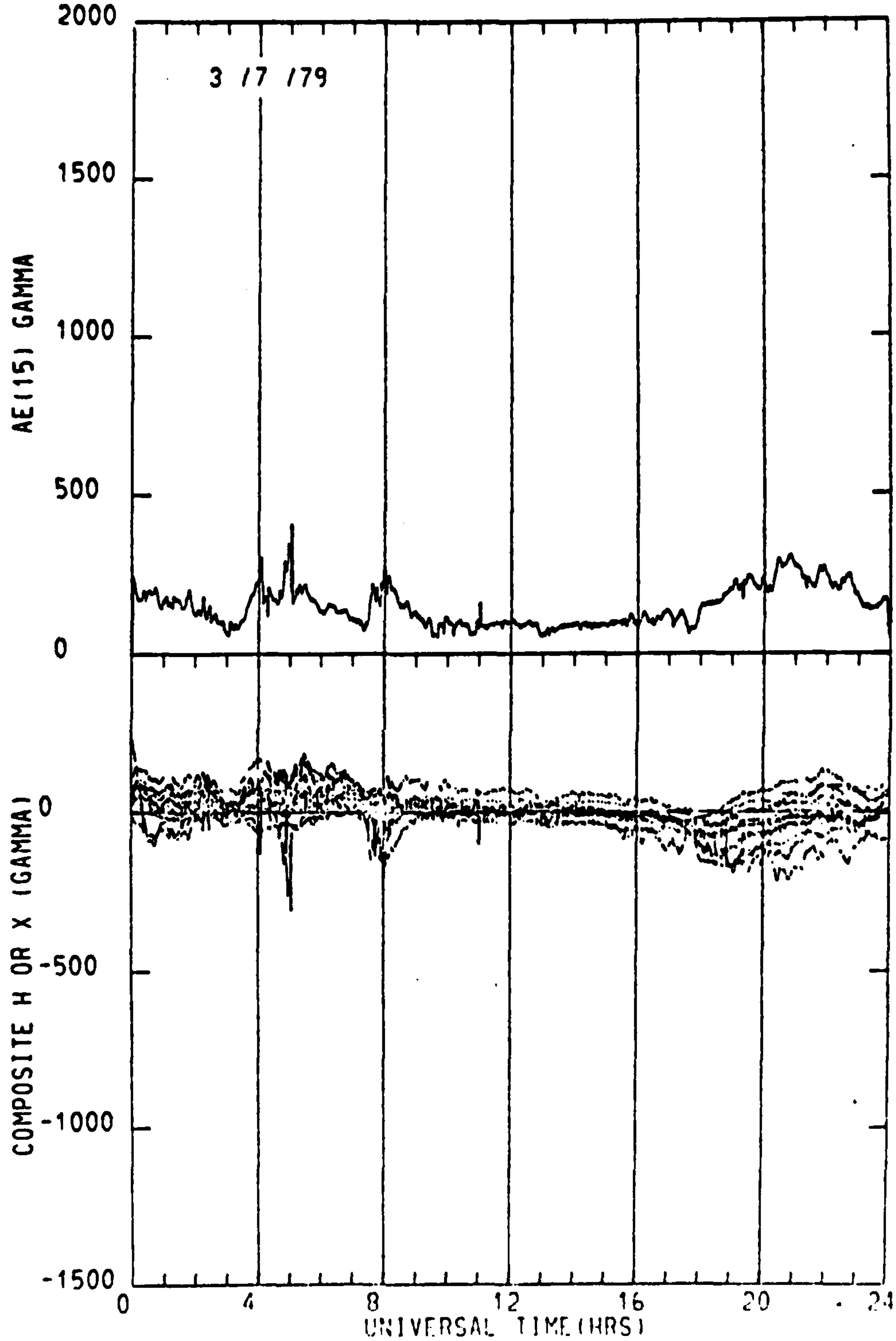
3 /4 /79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

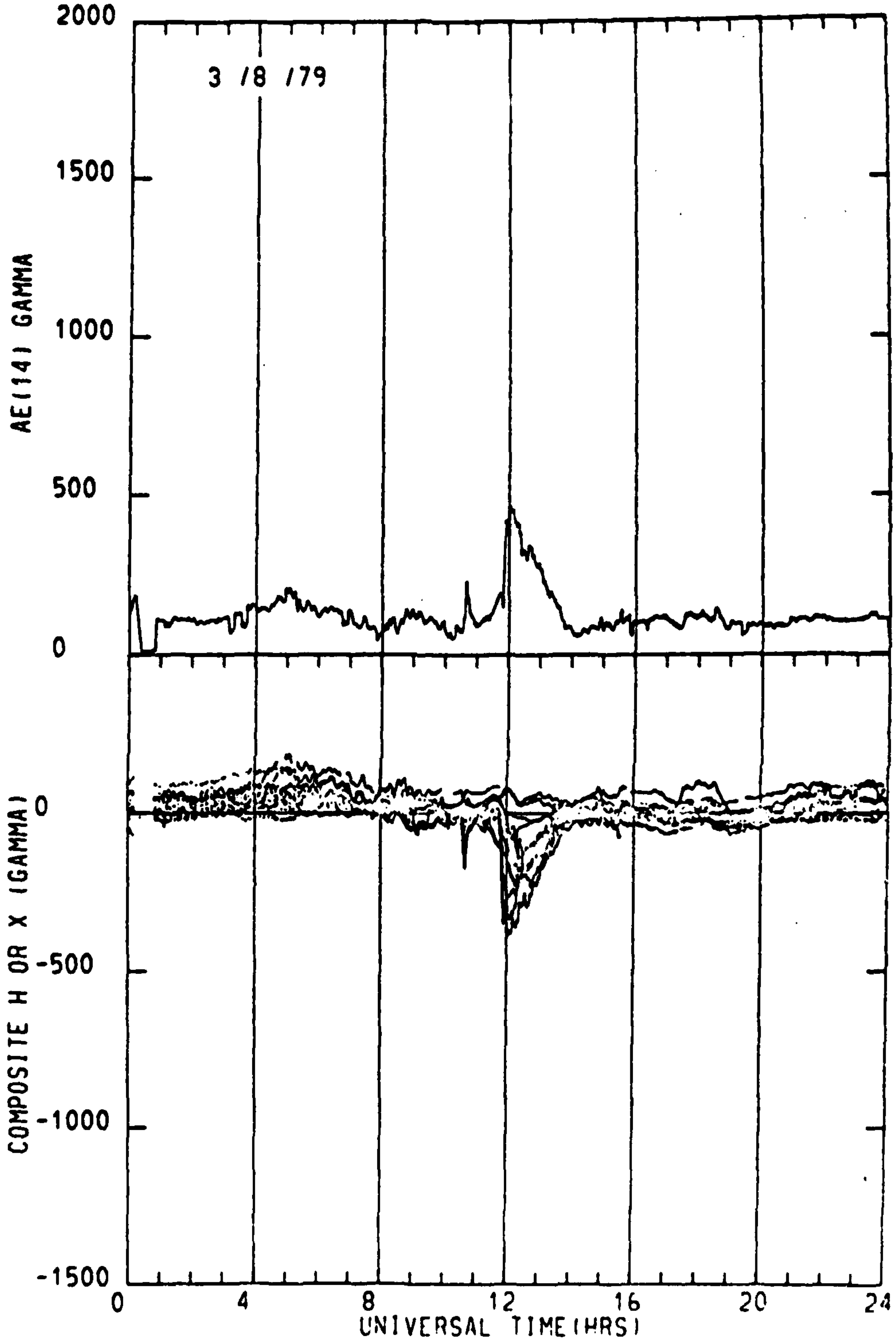

3 /5 /79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

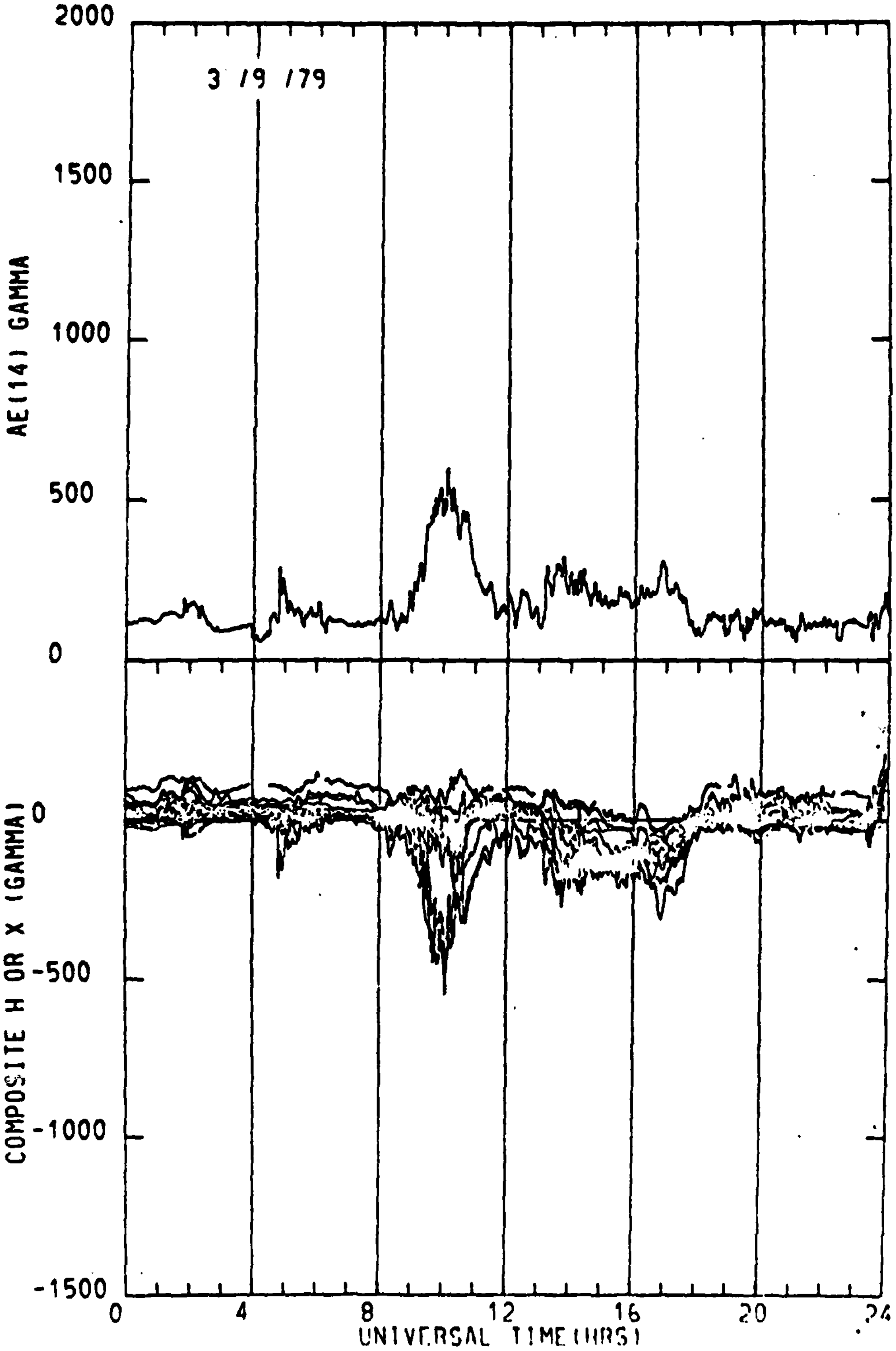

3 /6 /79
AE(15) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

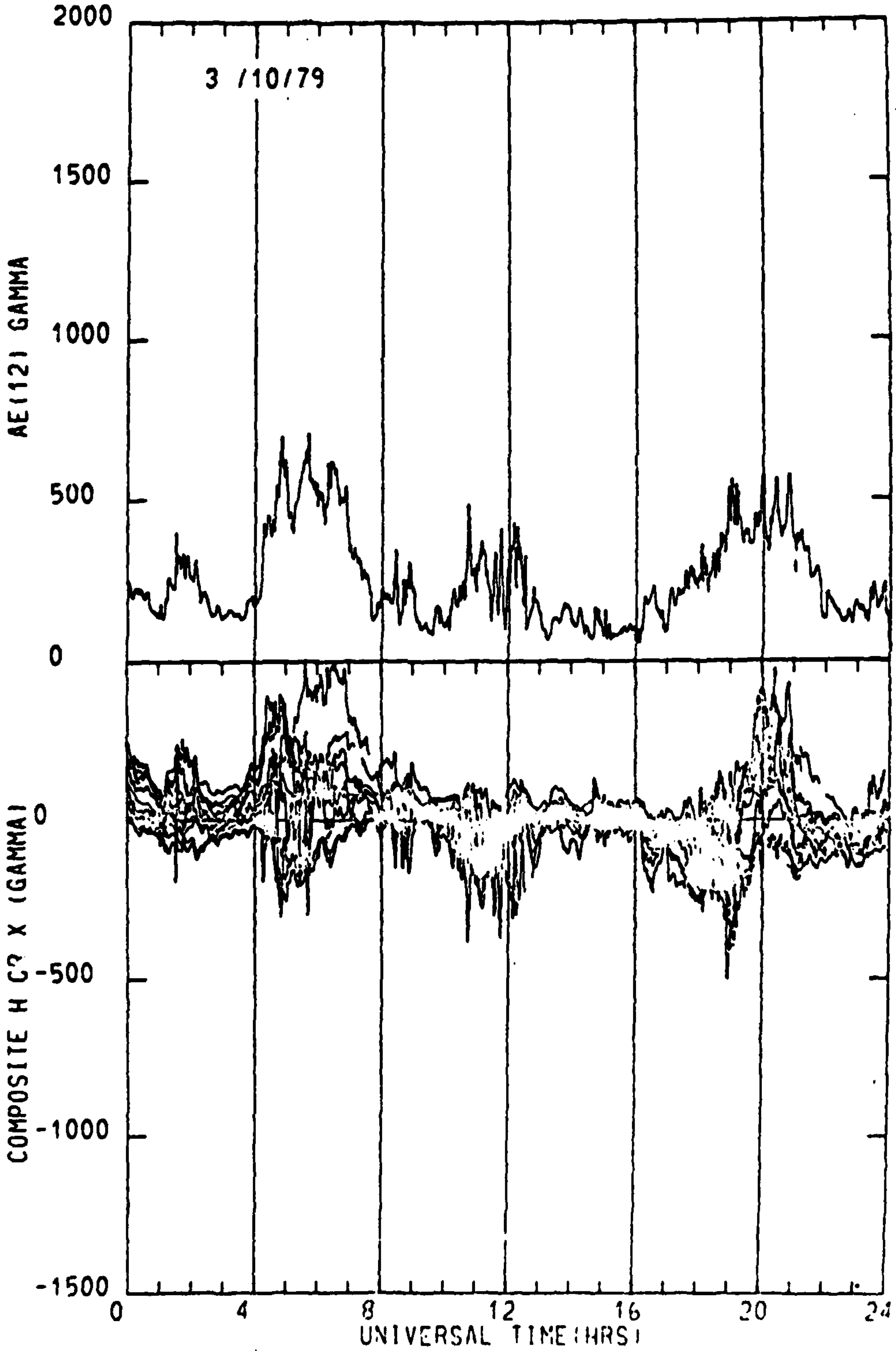
AD-A104 109 JOHNS HOPKINS UNIV LAUREL MD APPLIED PHYSICS LAB F/G 8/14
MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (--ETC(U)
DEC 80 C MENG MIPR-FY71218000009
UNCLASSIFIED AFGL-TR-81-0104 NL

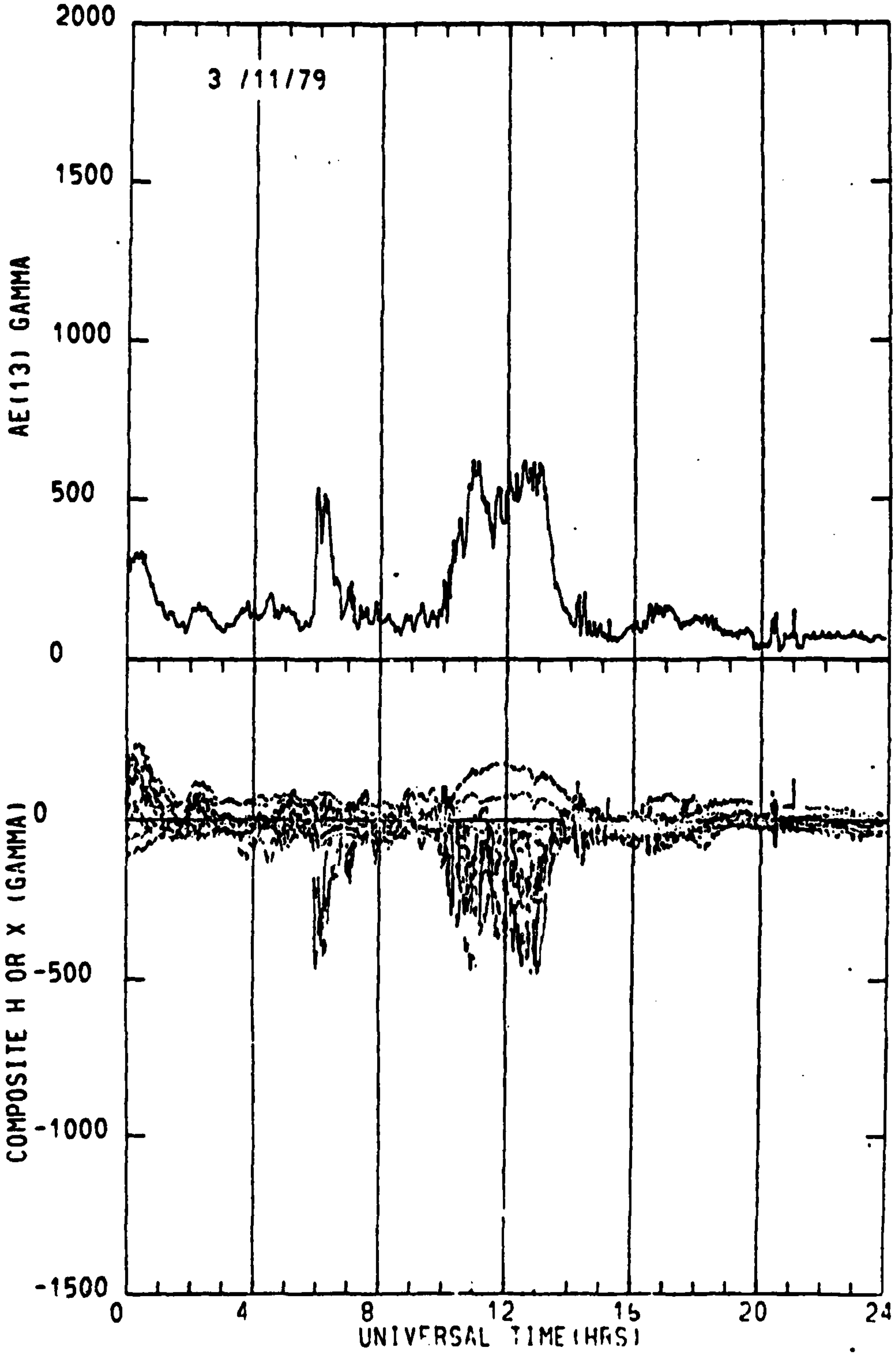
2 OF 5
AD
A104109

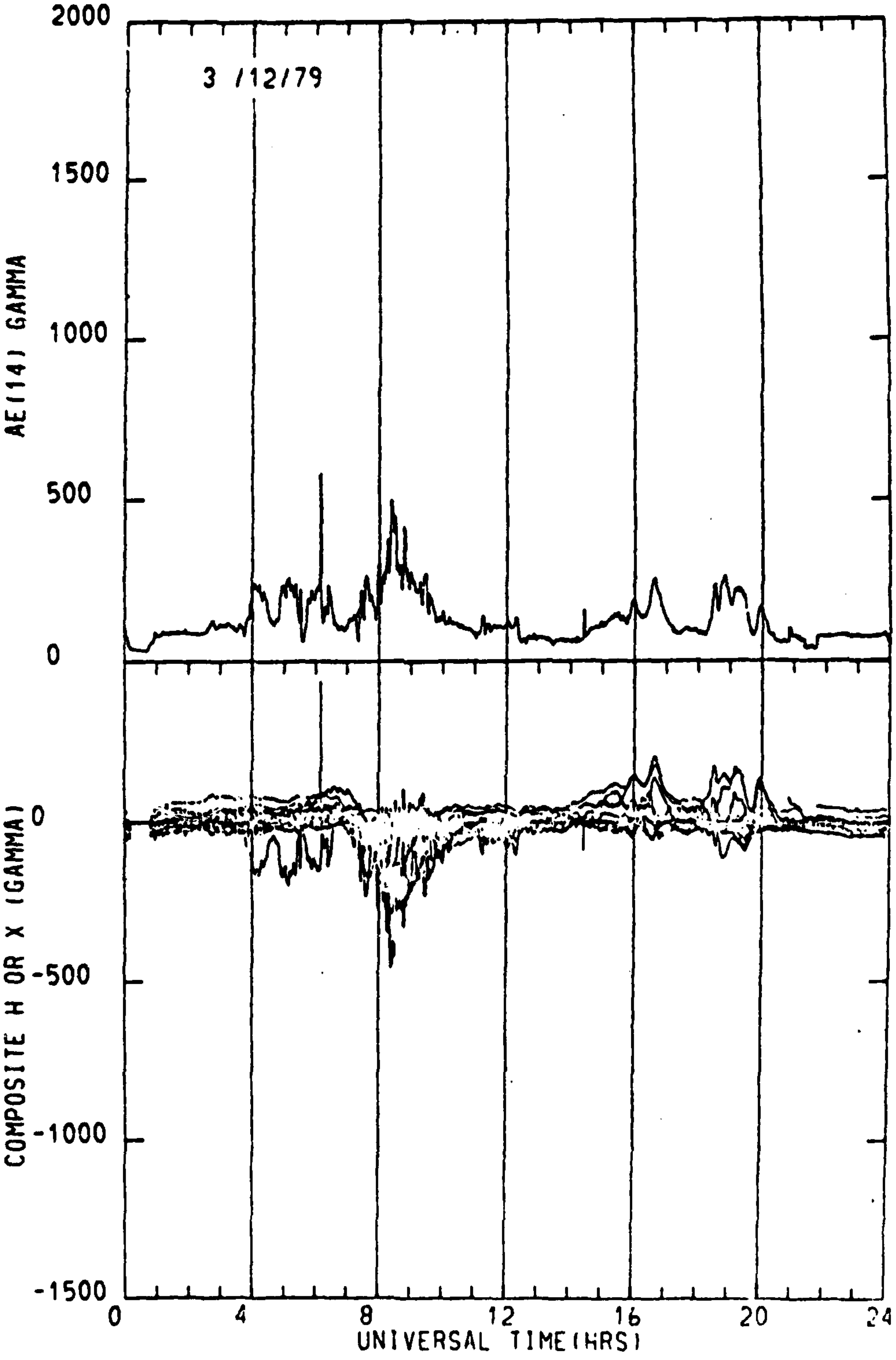

3 /7 /79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


3 /8 /79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

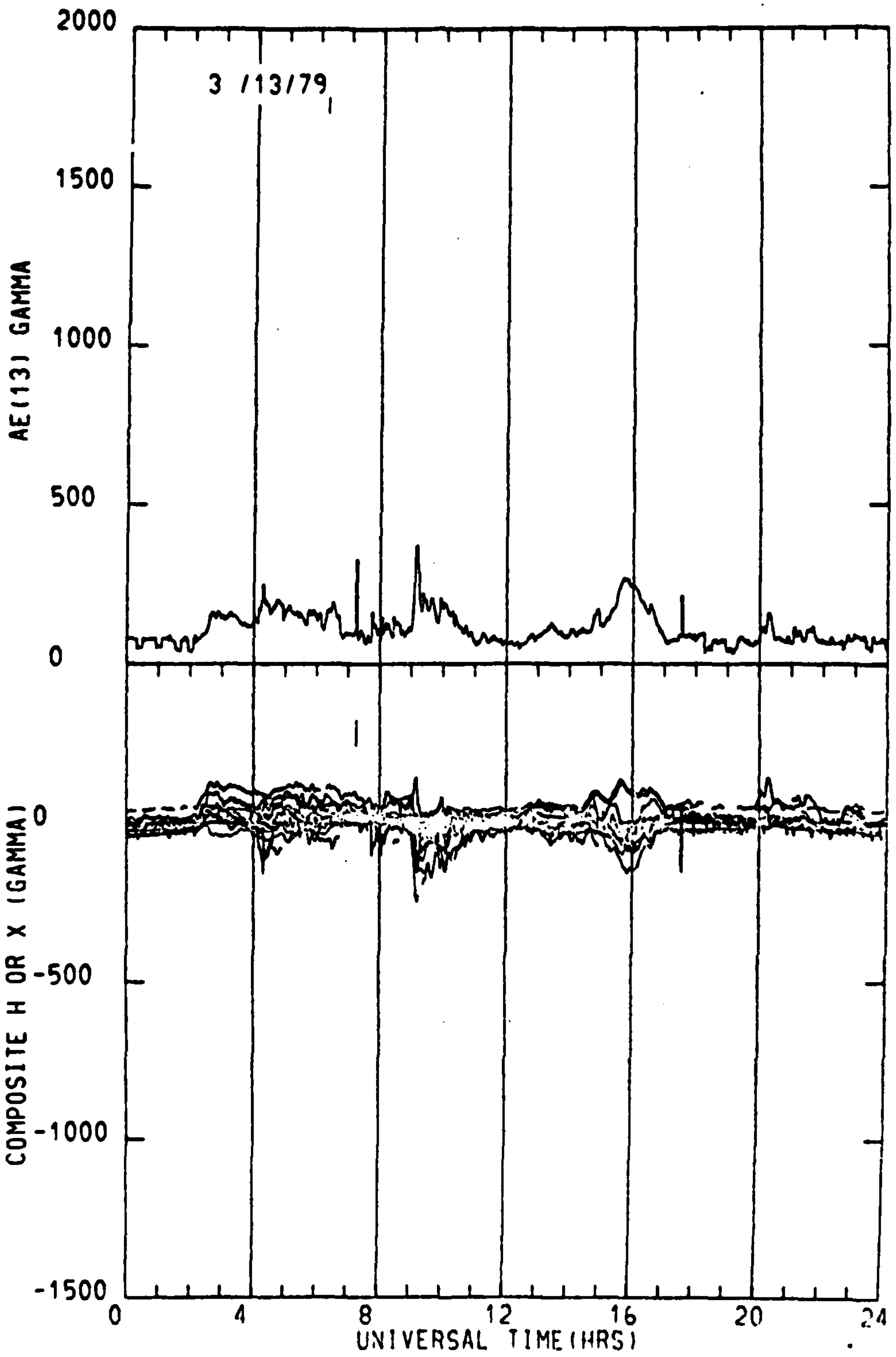

2000
1500
1000
500
0
-500
-1000
-1500
3 /9 /79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


3 /10/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H C? X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

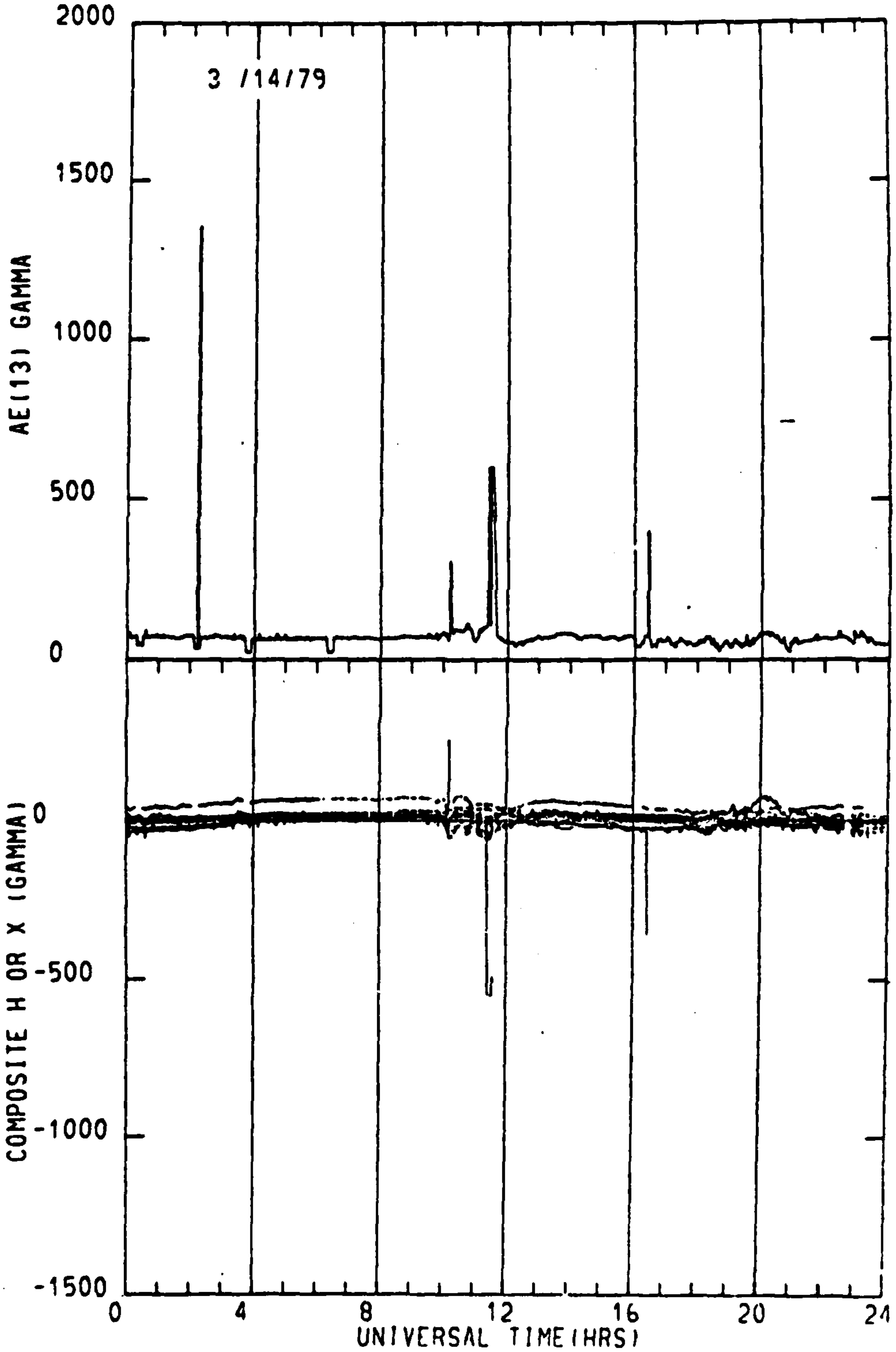

3 /11/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

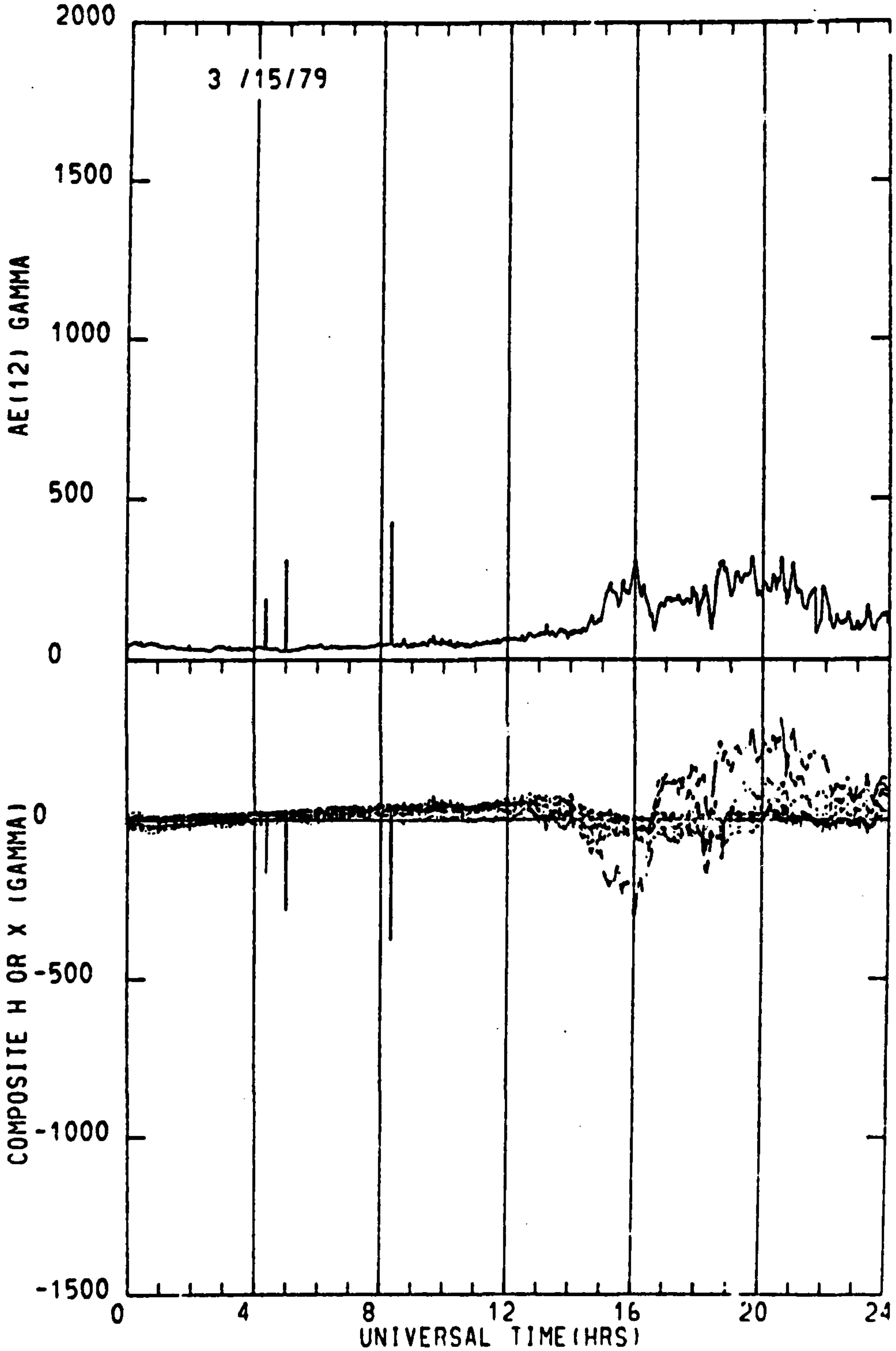


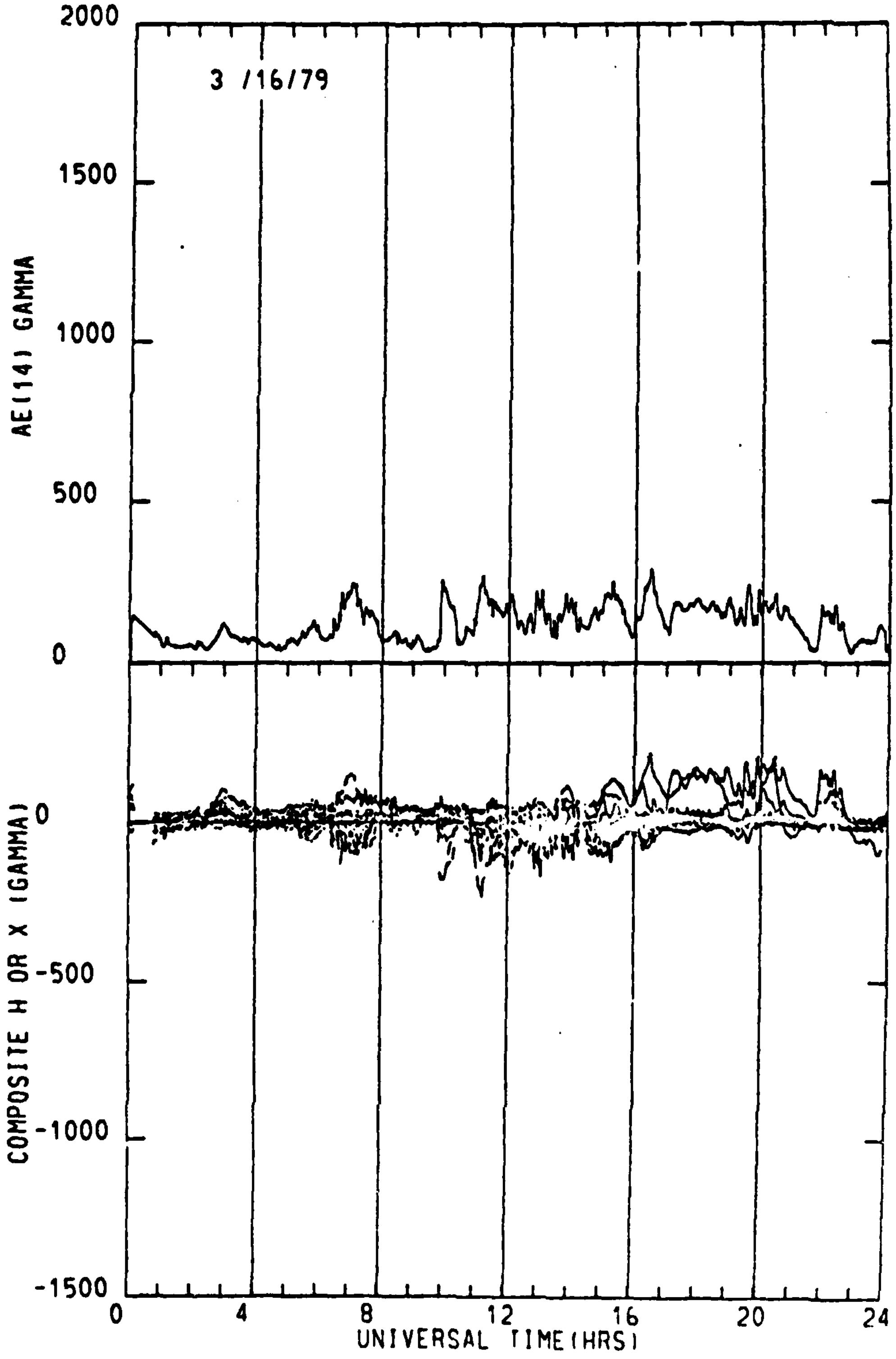
3 /12/79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

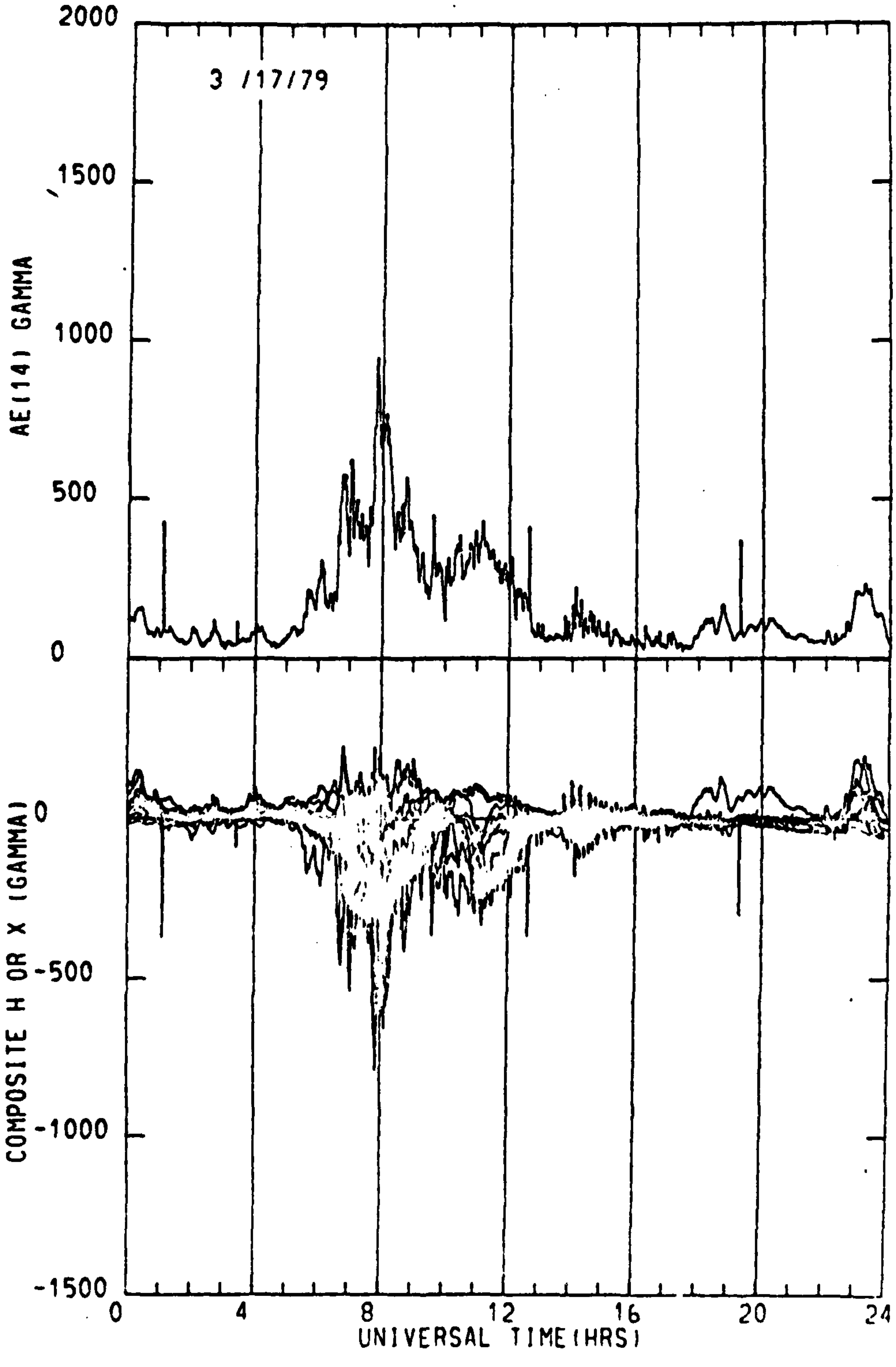


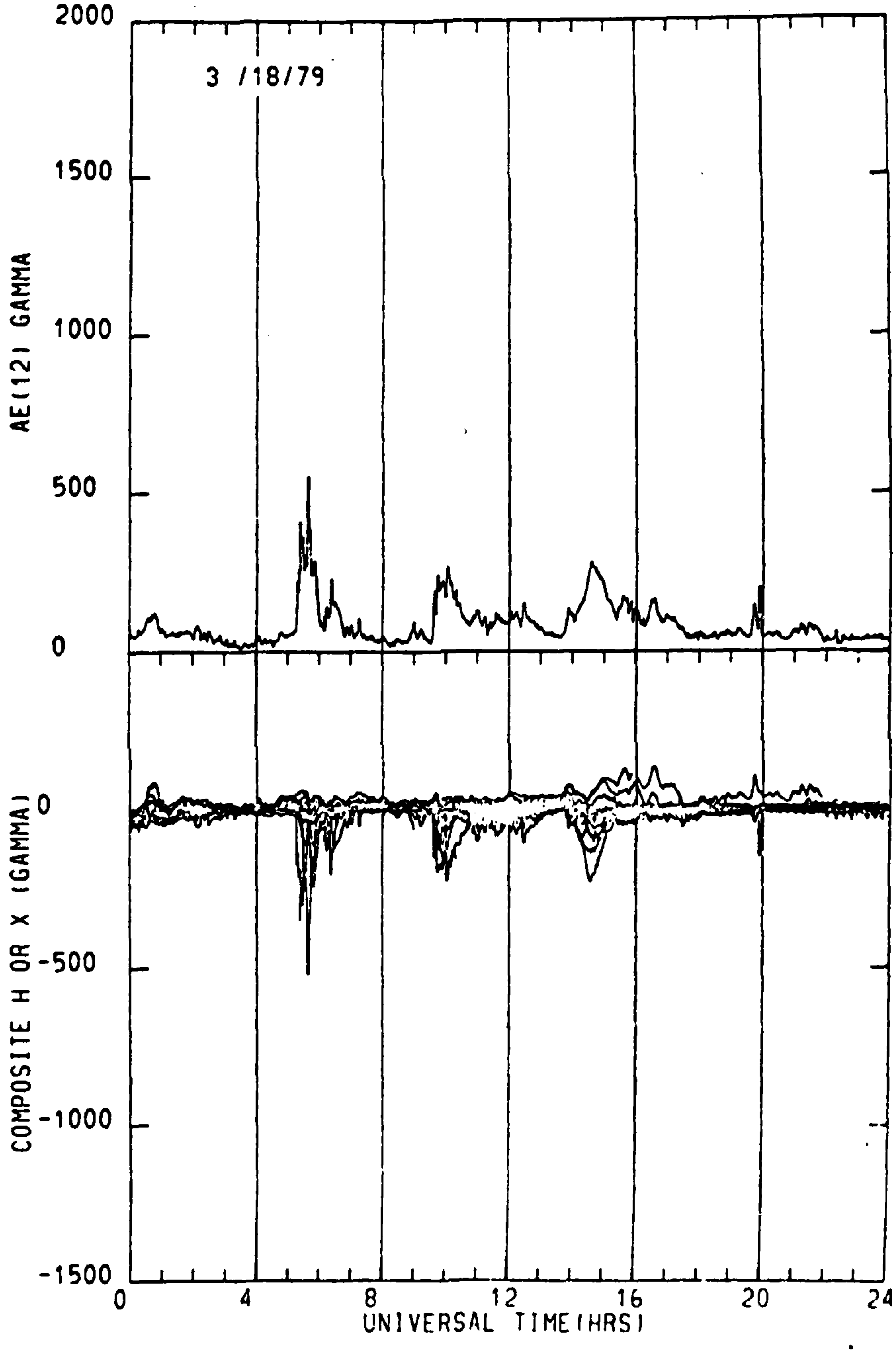
3 /13/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

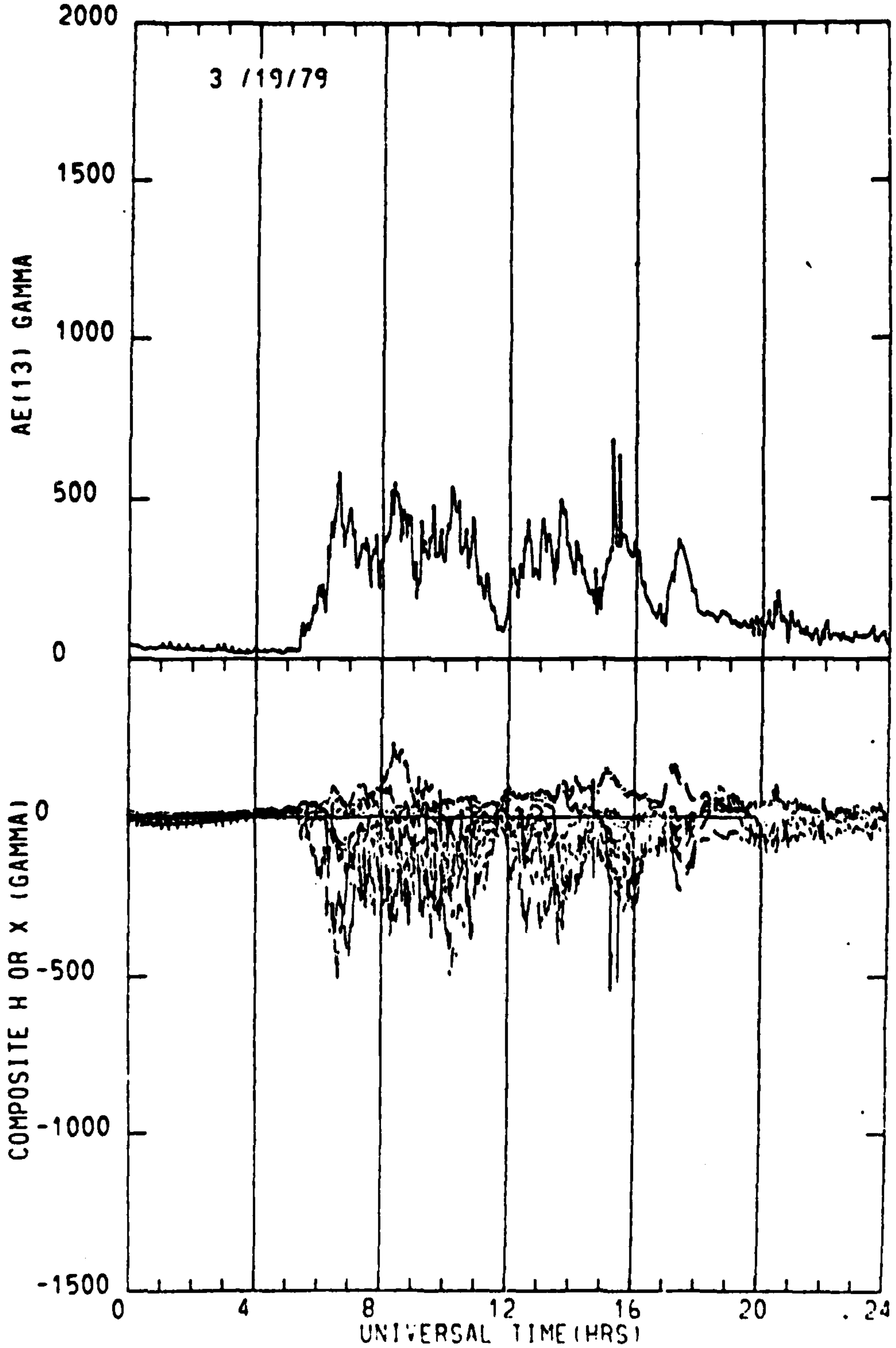

3 /14/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


3 /15/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

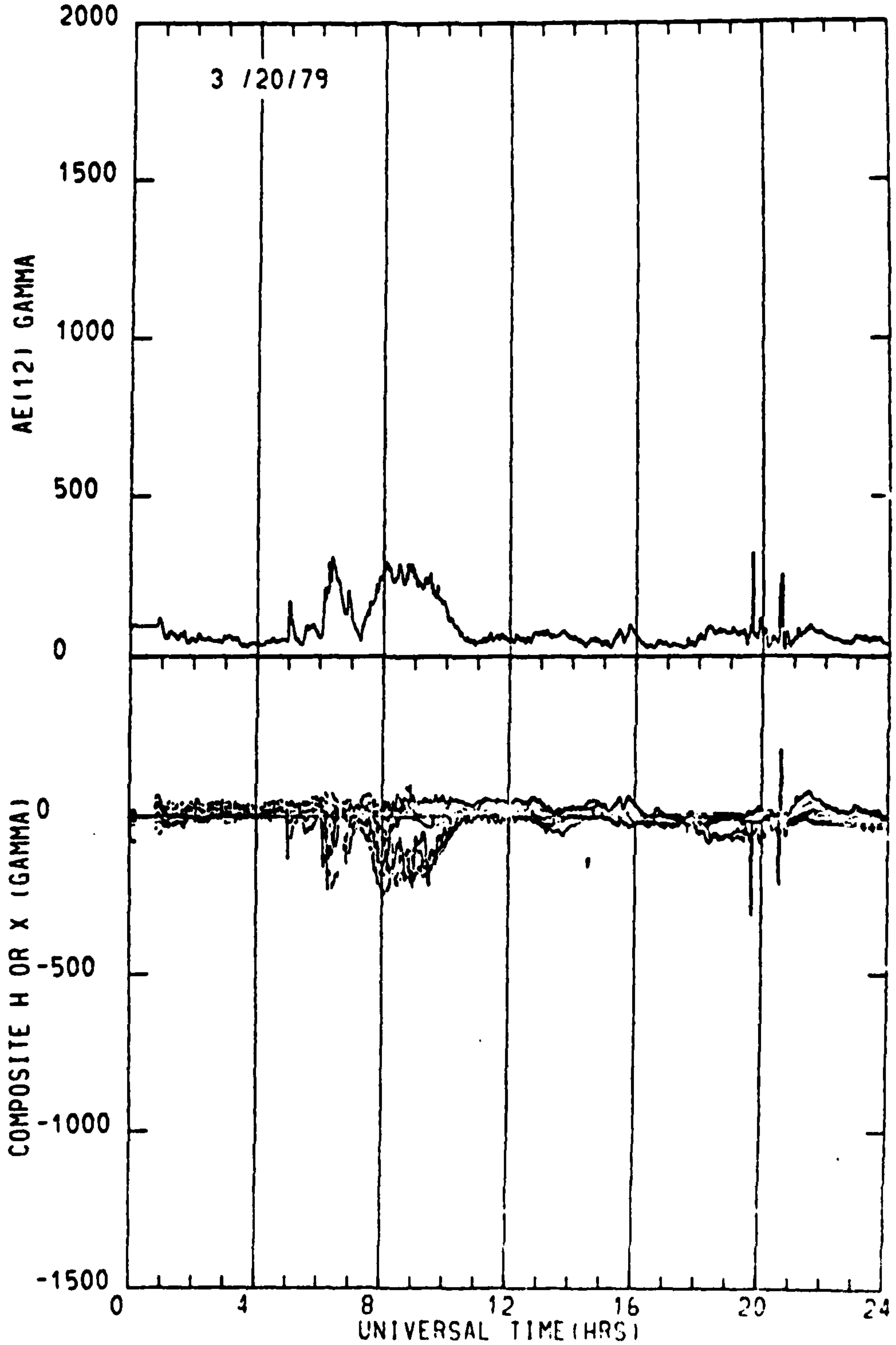

3 /16/79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

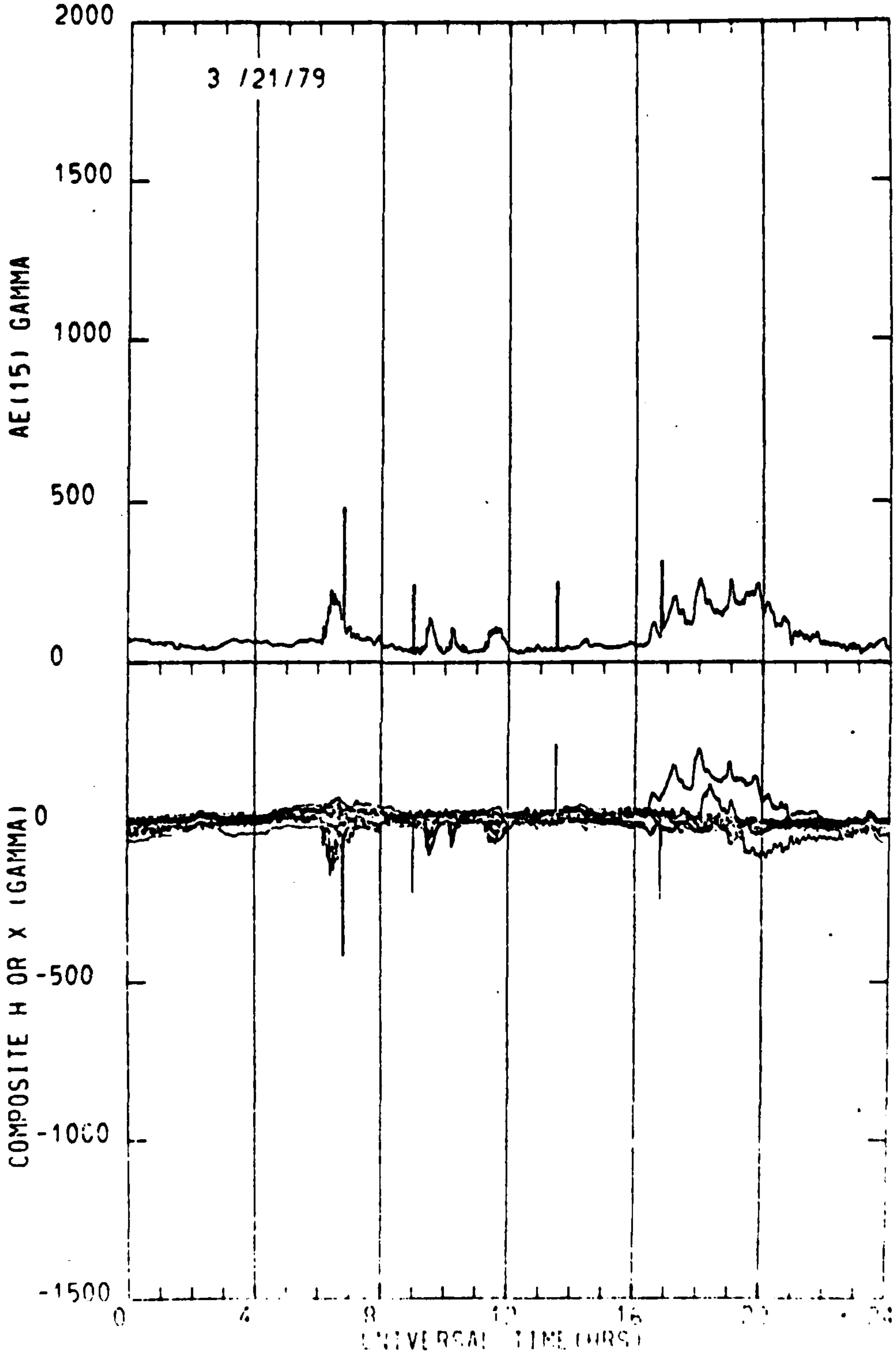

3 /17/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

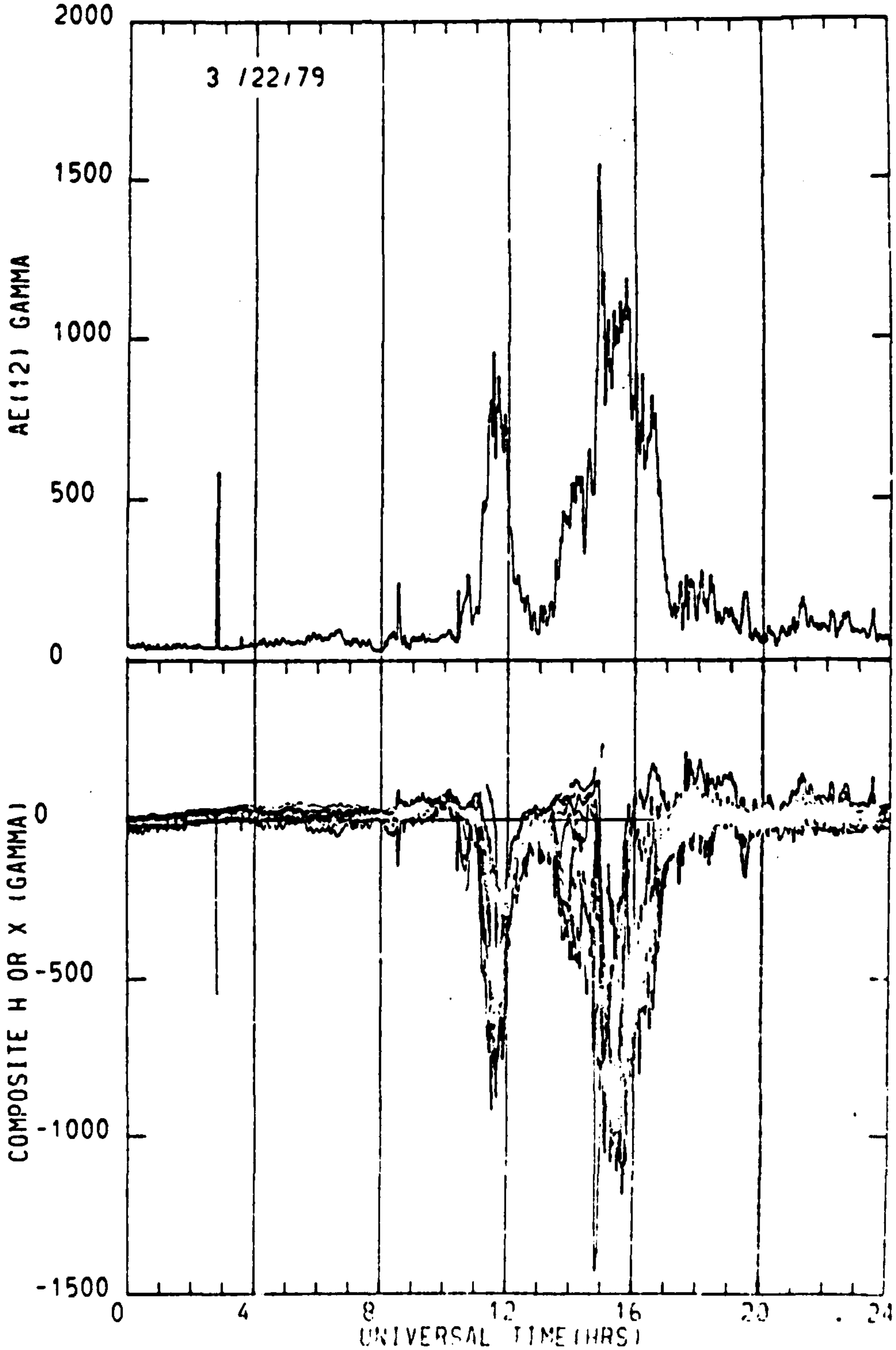

3 /18/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

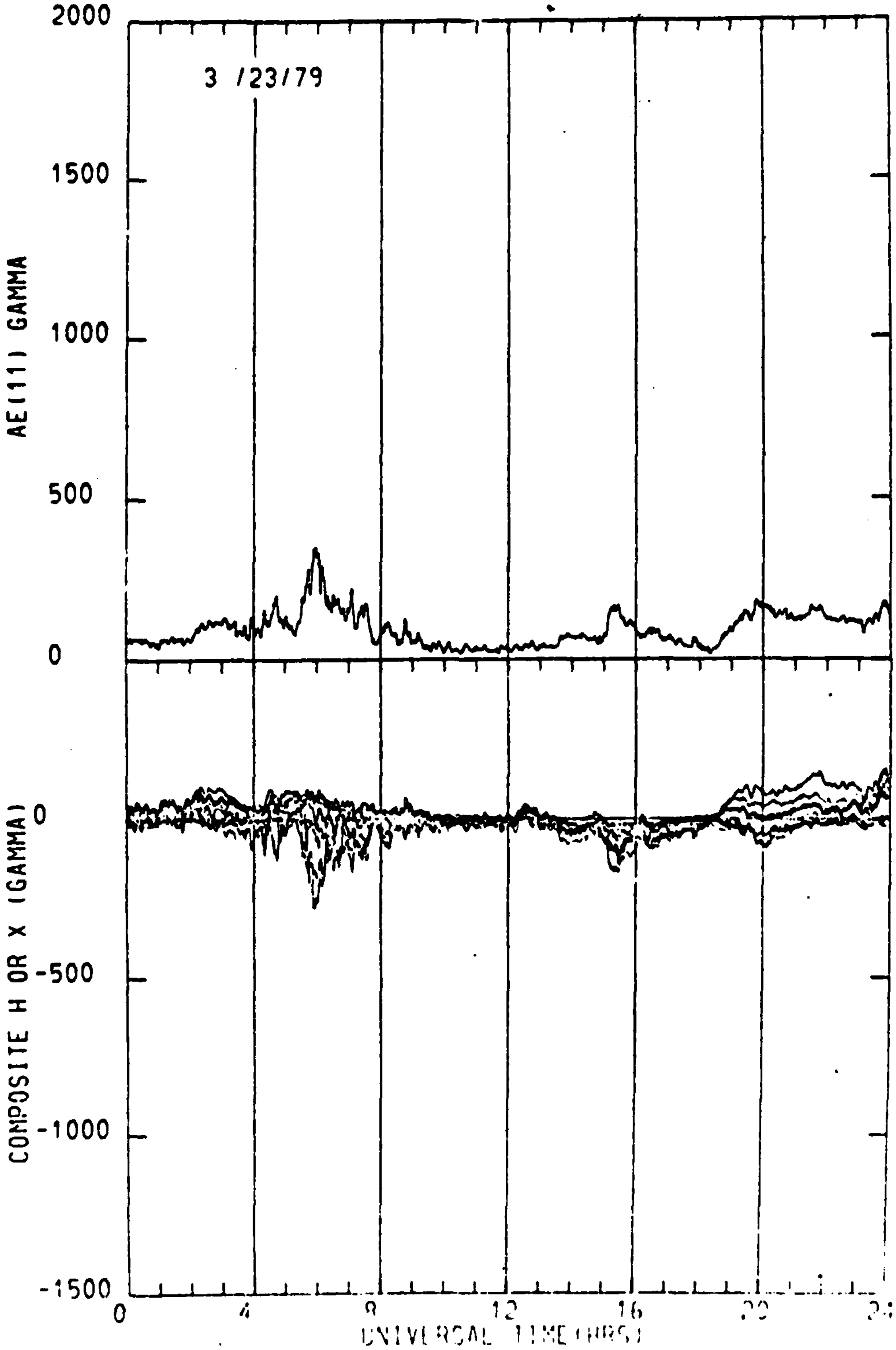


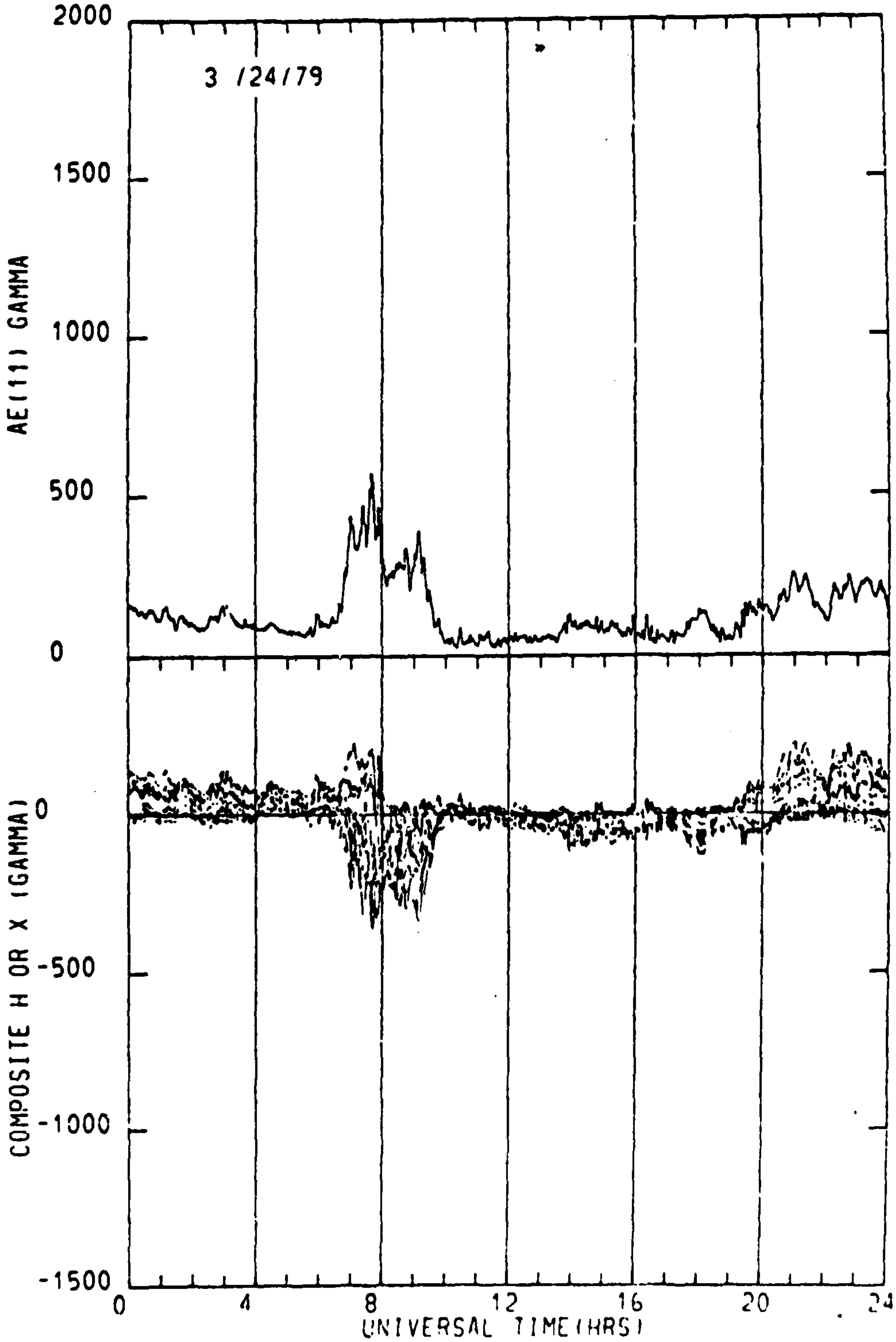
3 /19/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

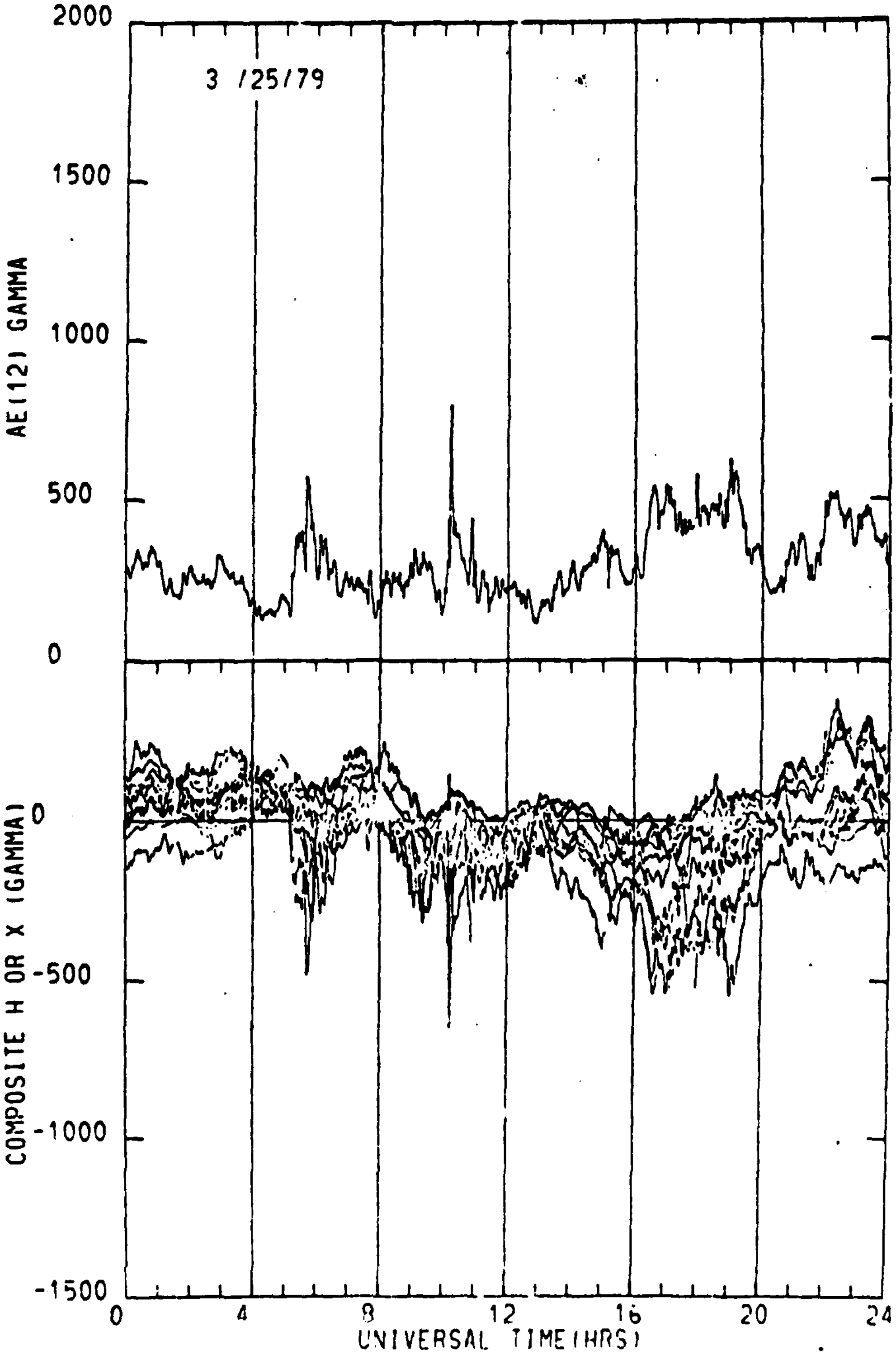

3 /20/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

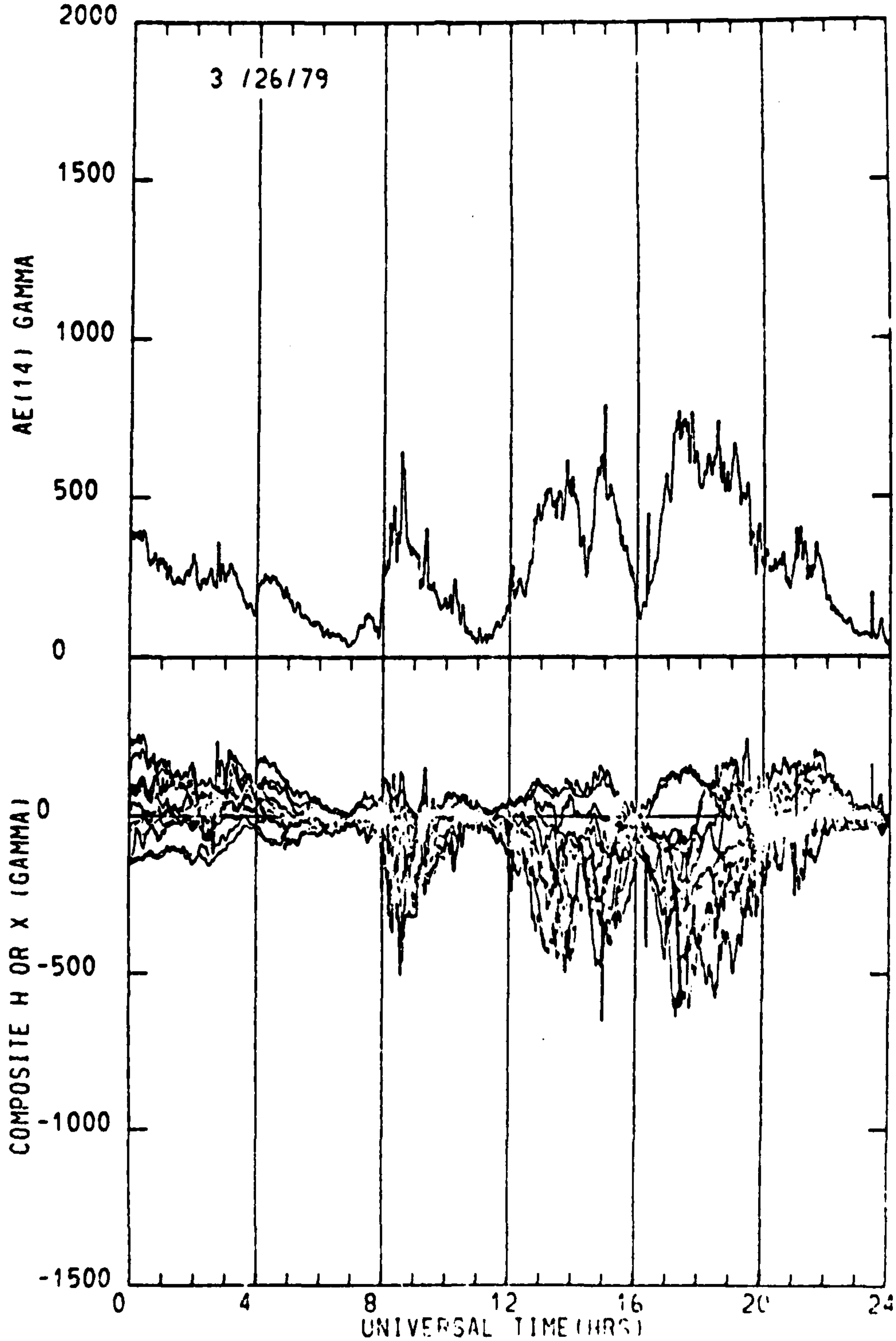

3 /21/79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
16
UNIVERSAL TIME (HRS)

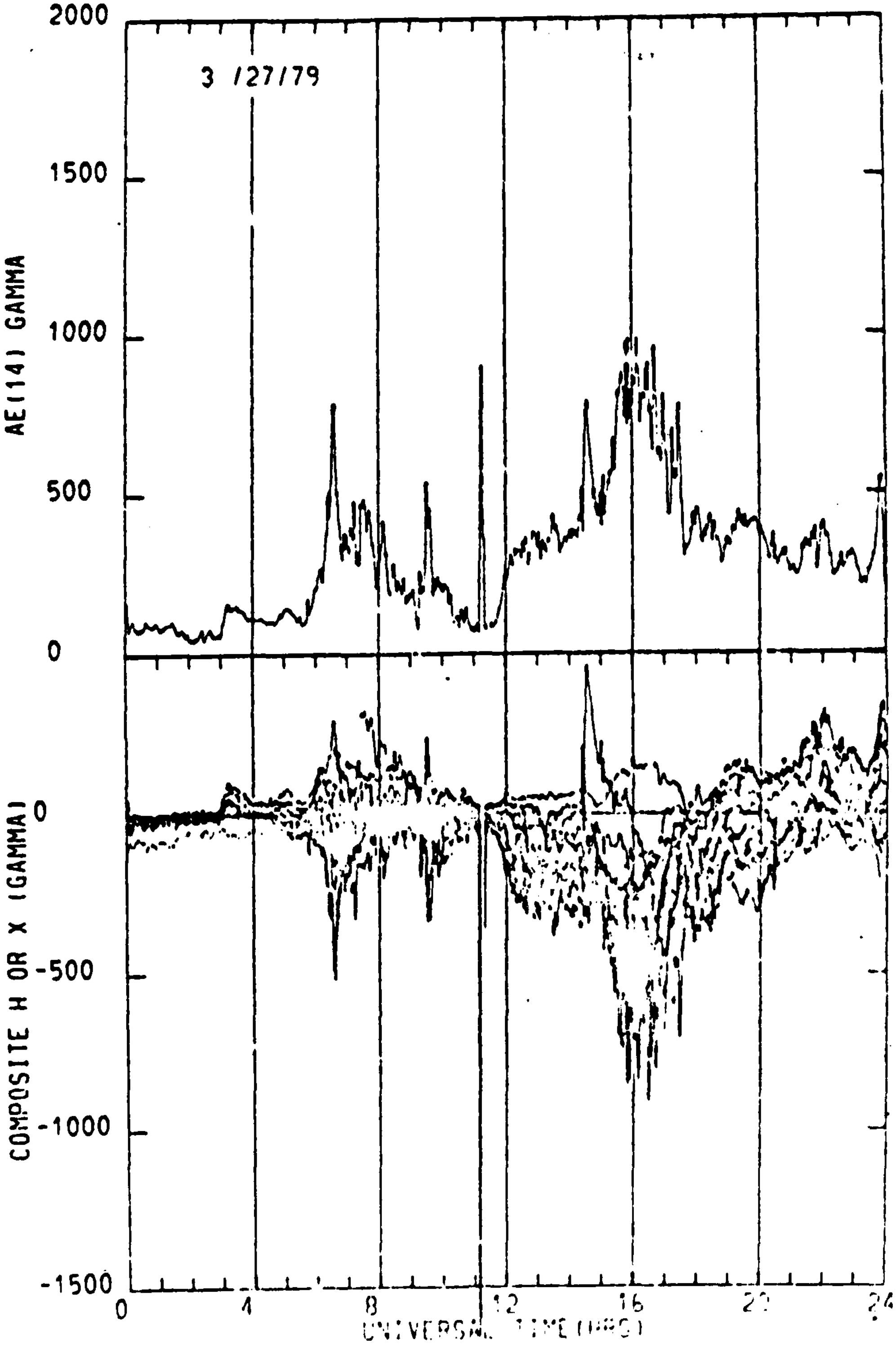

3 /22/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

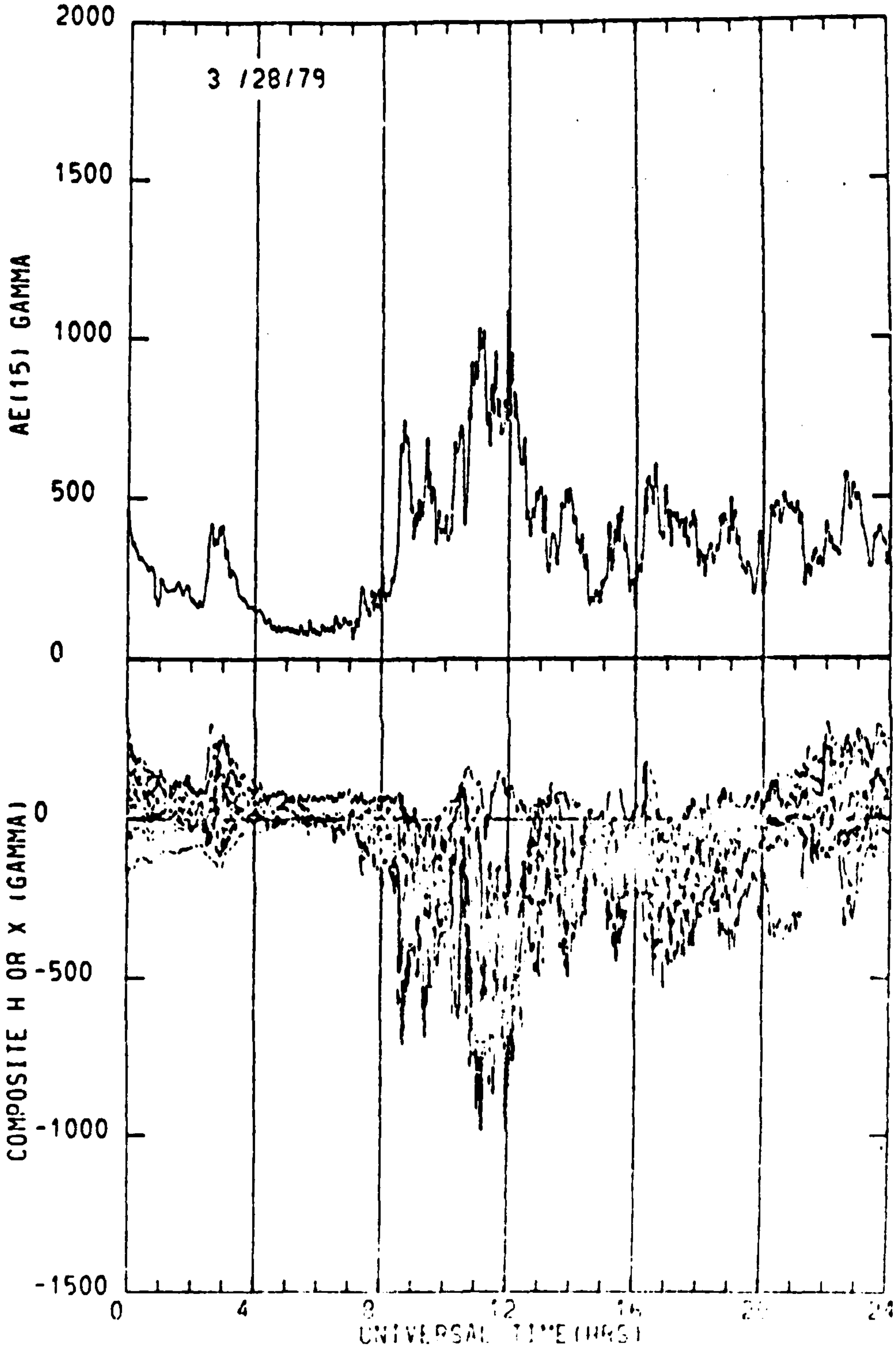

2000
1500
1000
500
0
3 /23/79
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
12
16

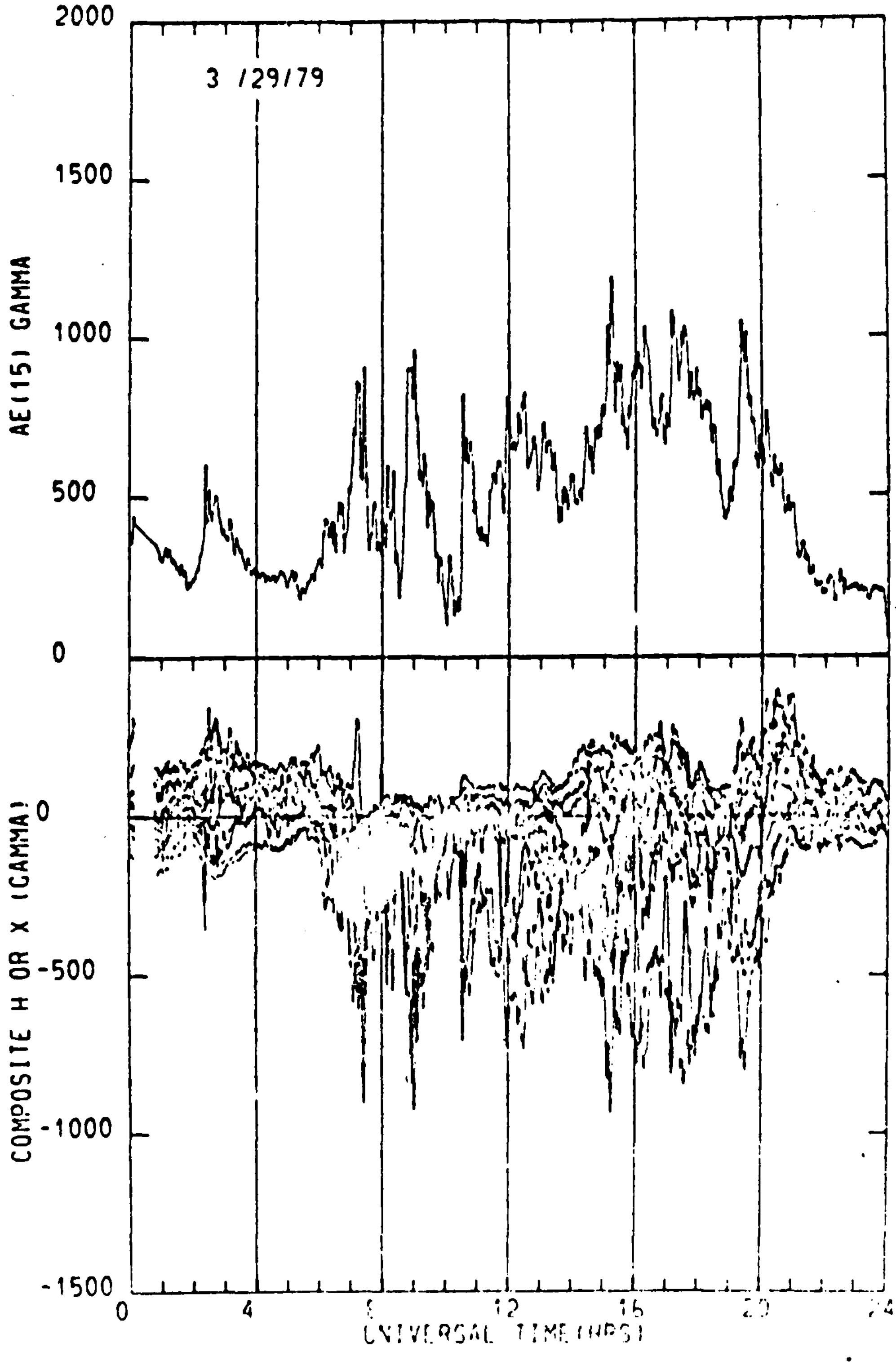

3 /24/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

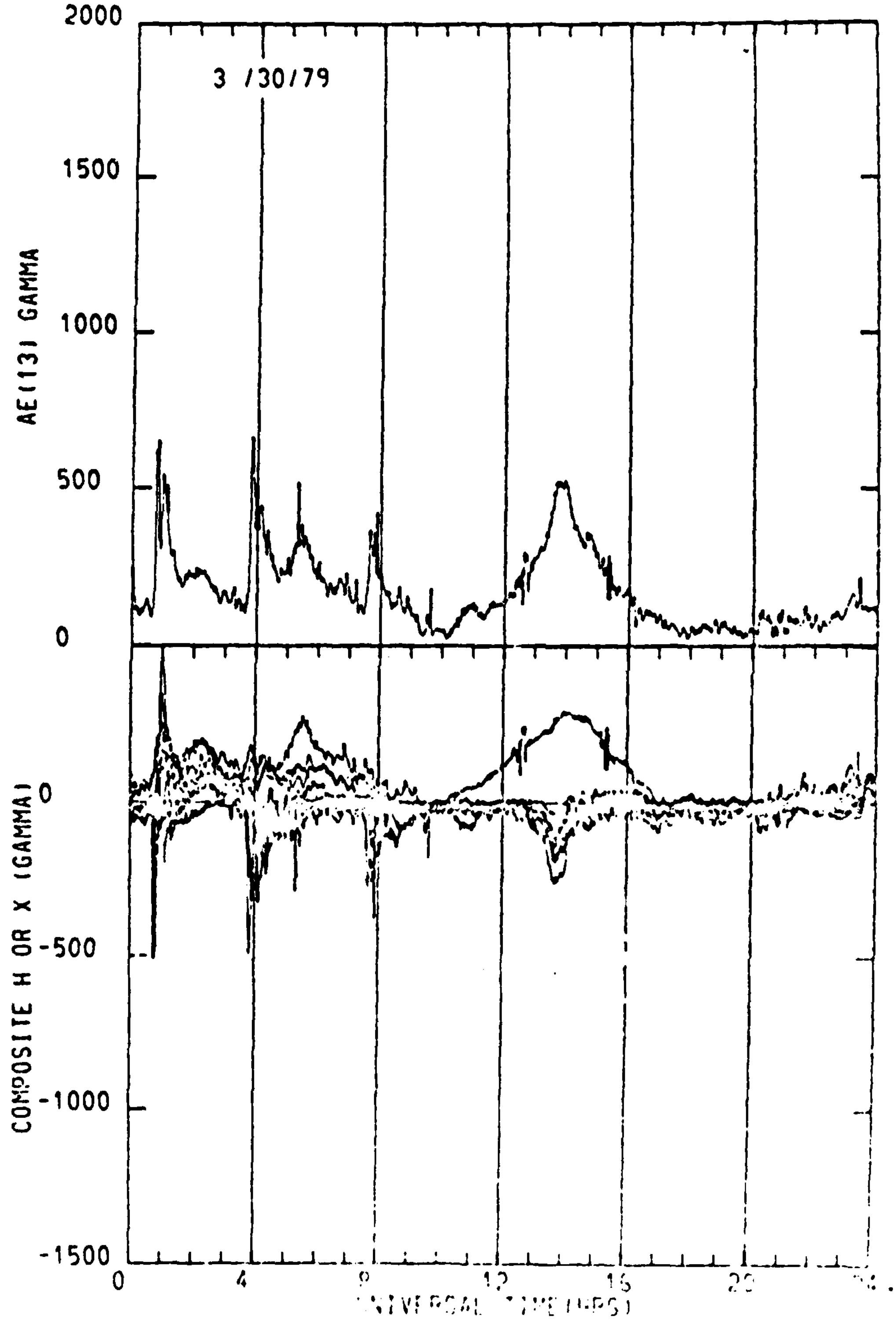

3 /25/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

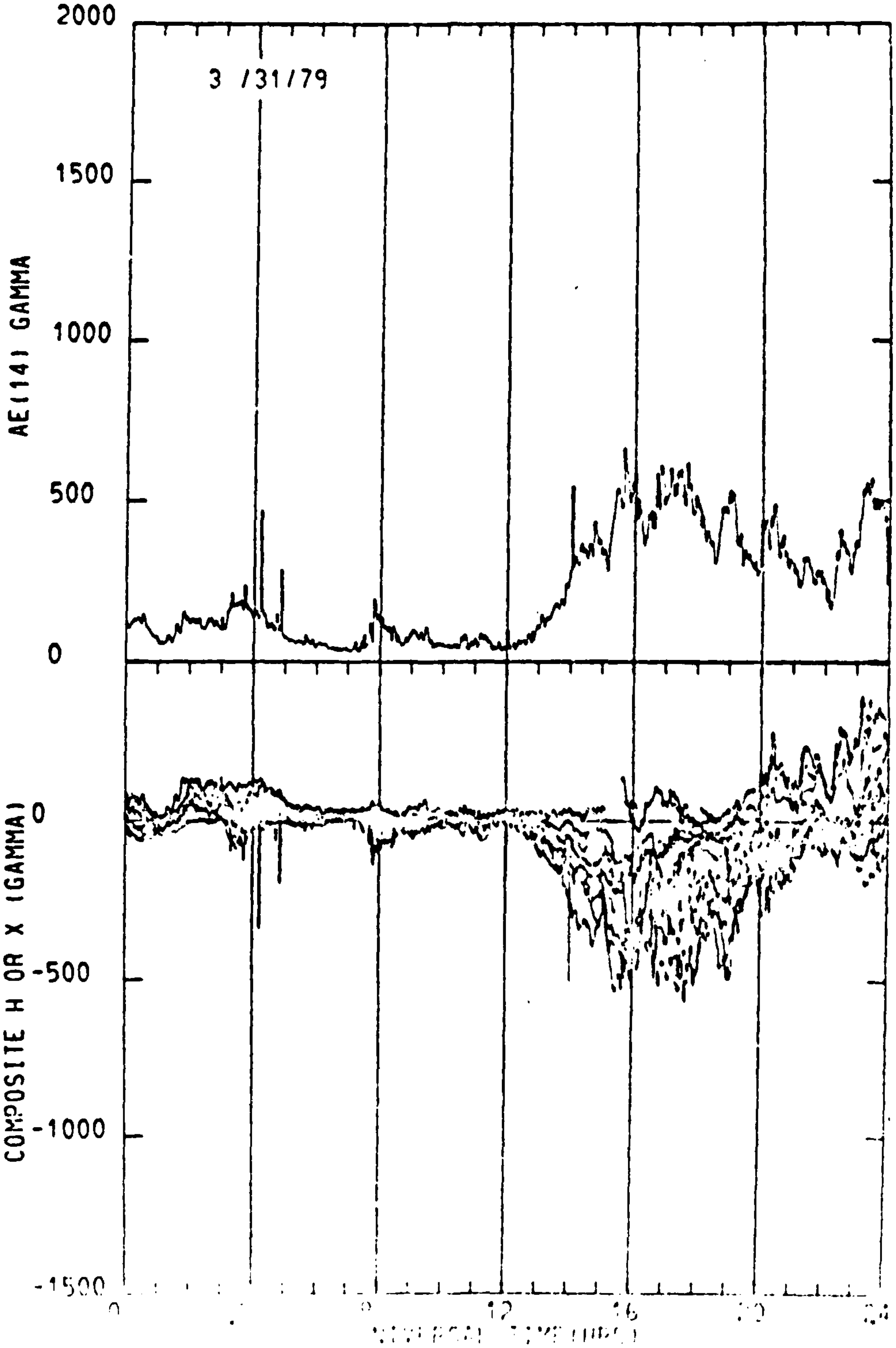

2000
3 /26/79
1500
1000
AE(14) GAMMA
500
0
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

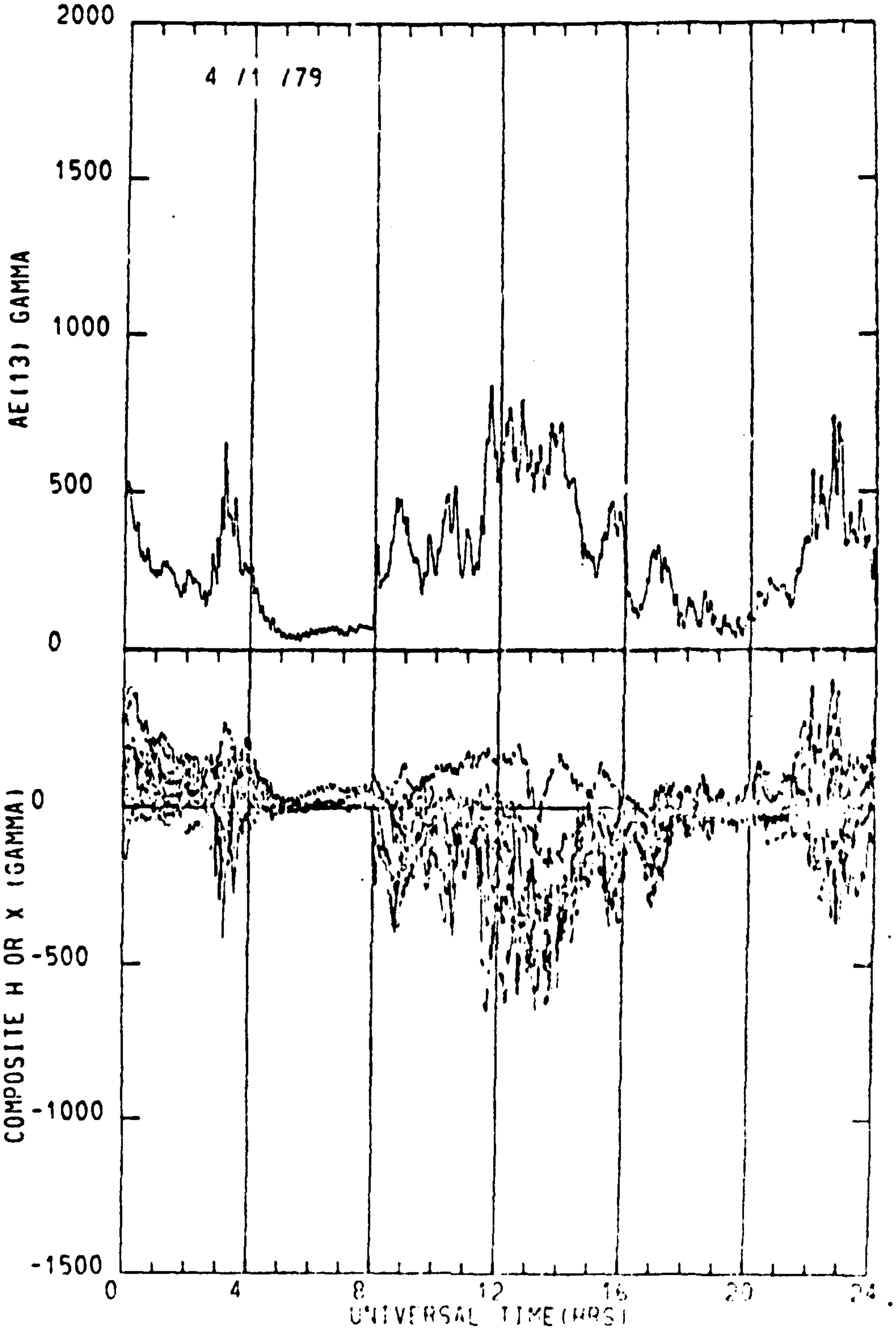

3 /27/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

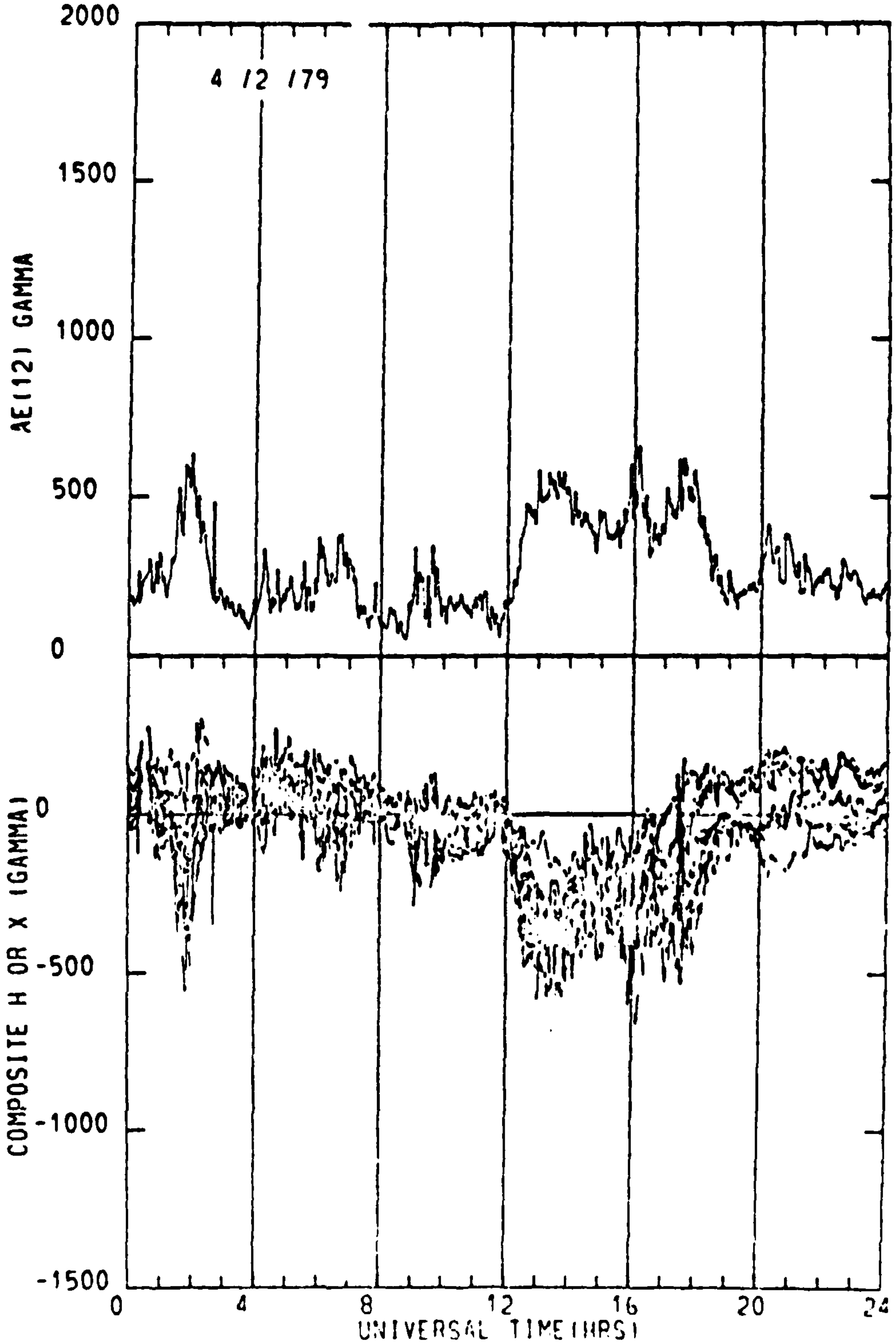

2000
3 /28/79
1500
AE(15) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
12
UNIVERSAL TIME(HRS)

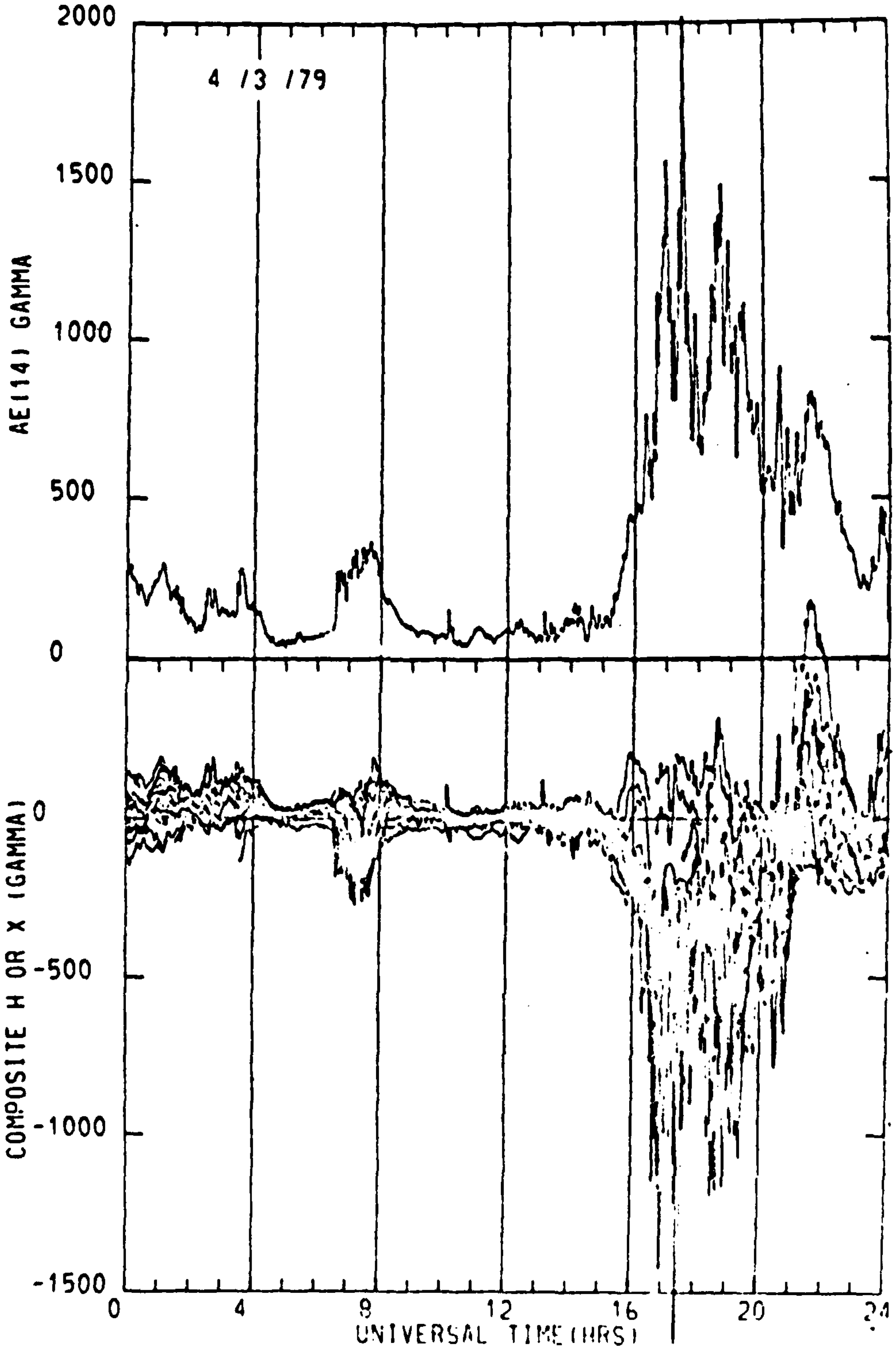

3 /29/79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

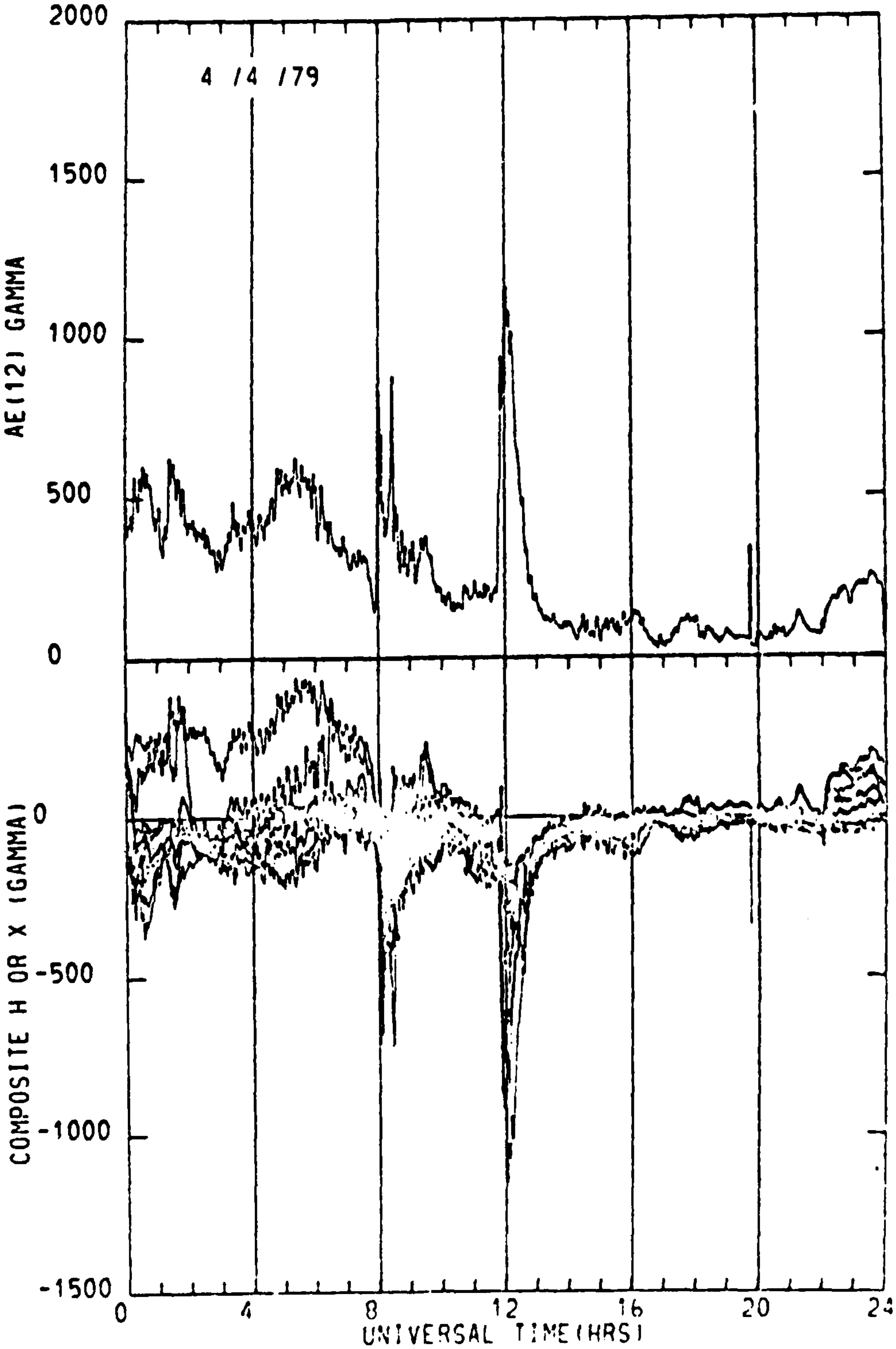

3 /30/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
12
20

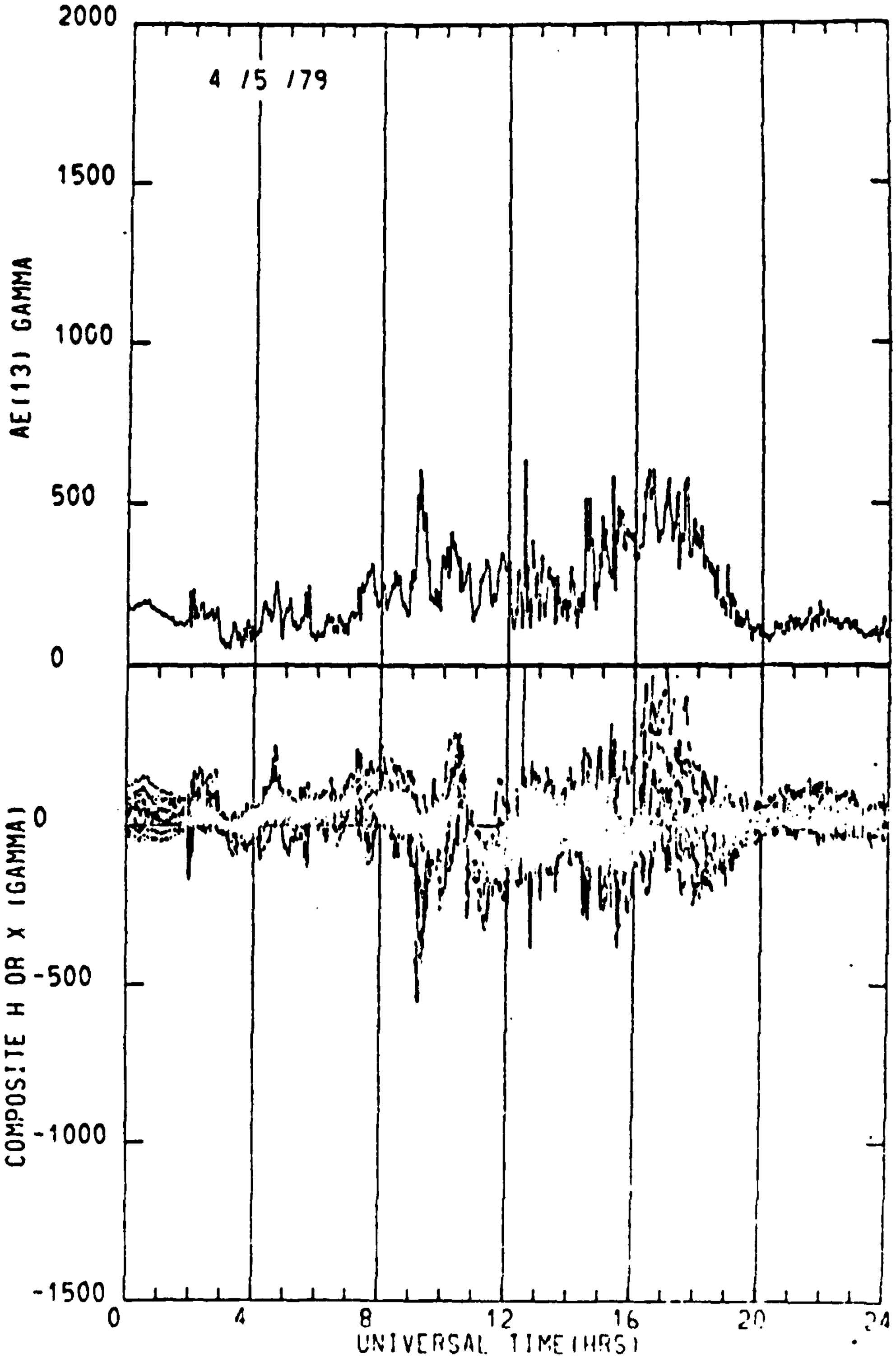

3 /31/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
12
16
24


4 /1 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

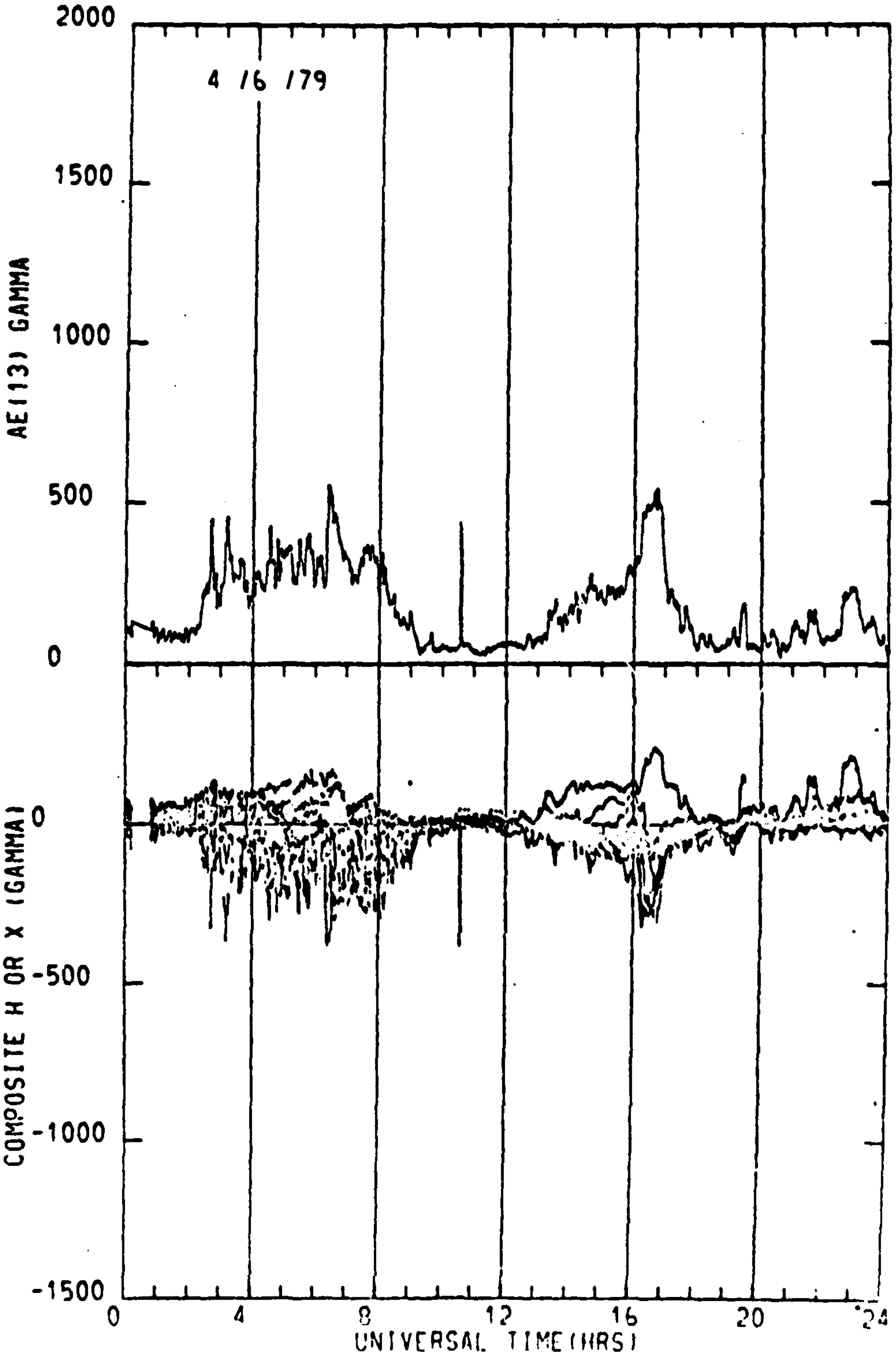

4 /2 /79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


4 /3 /79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

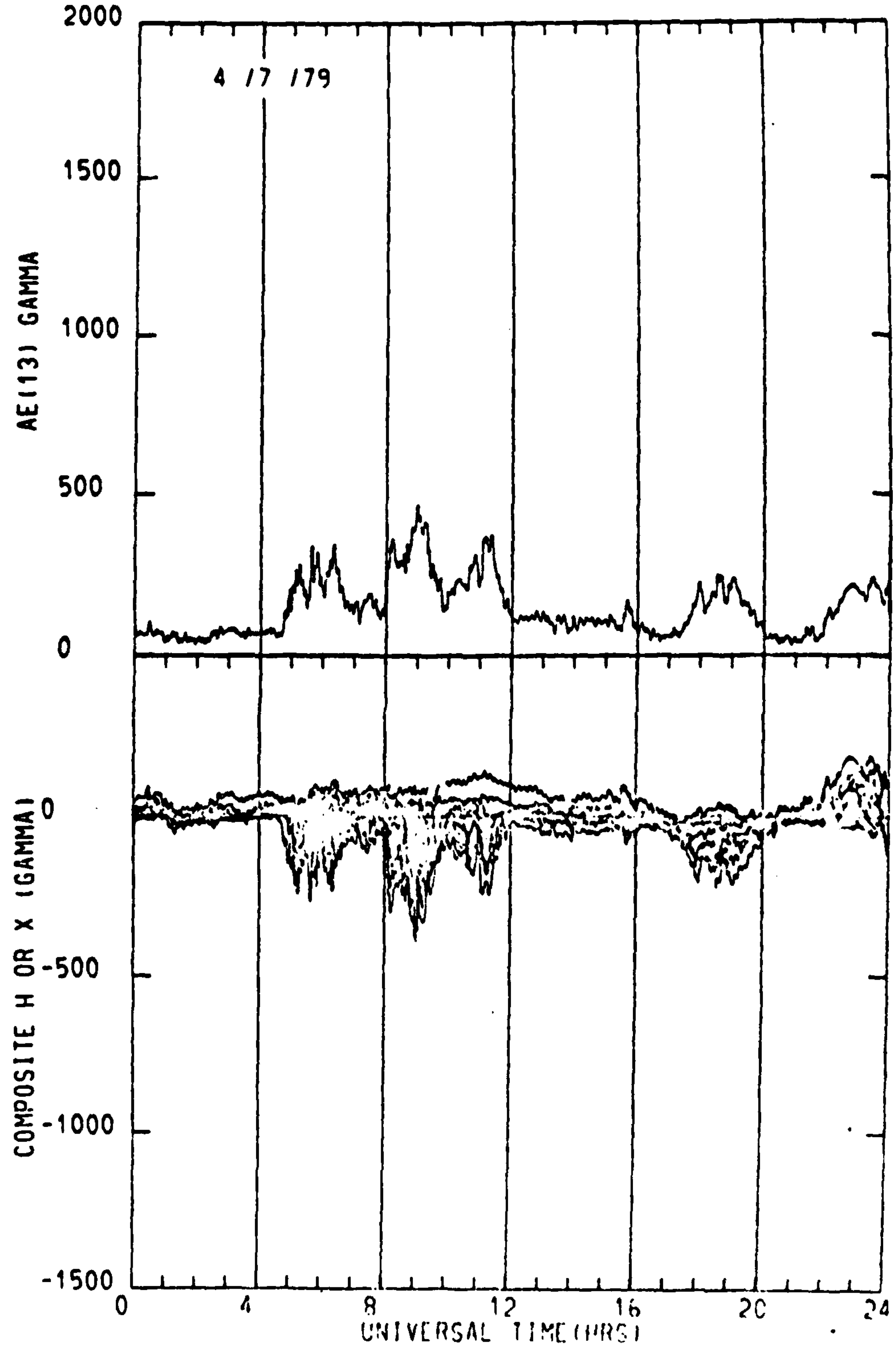

4 /4 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

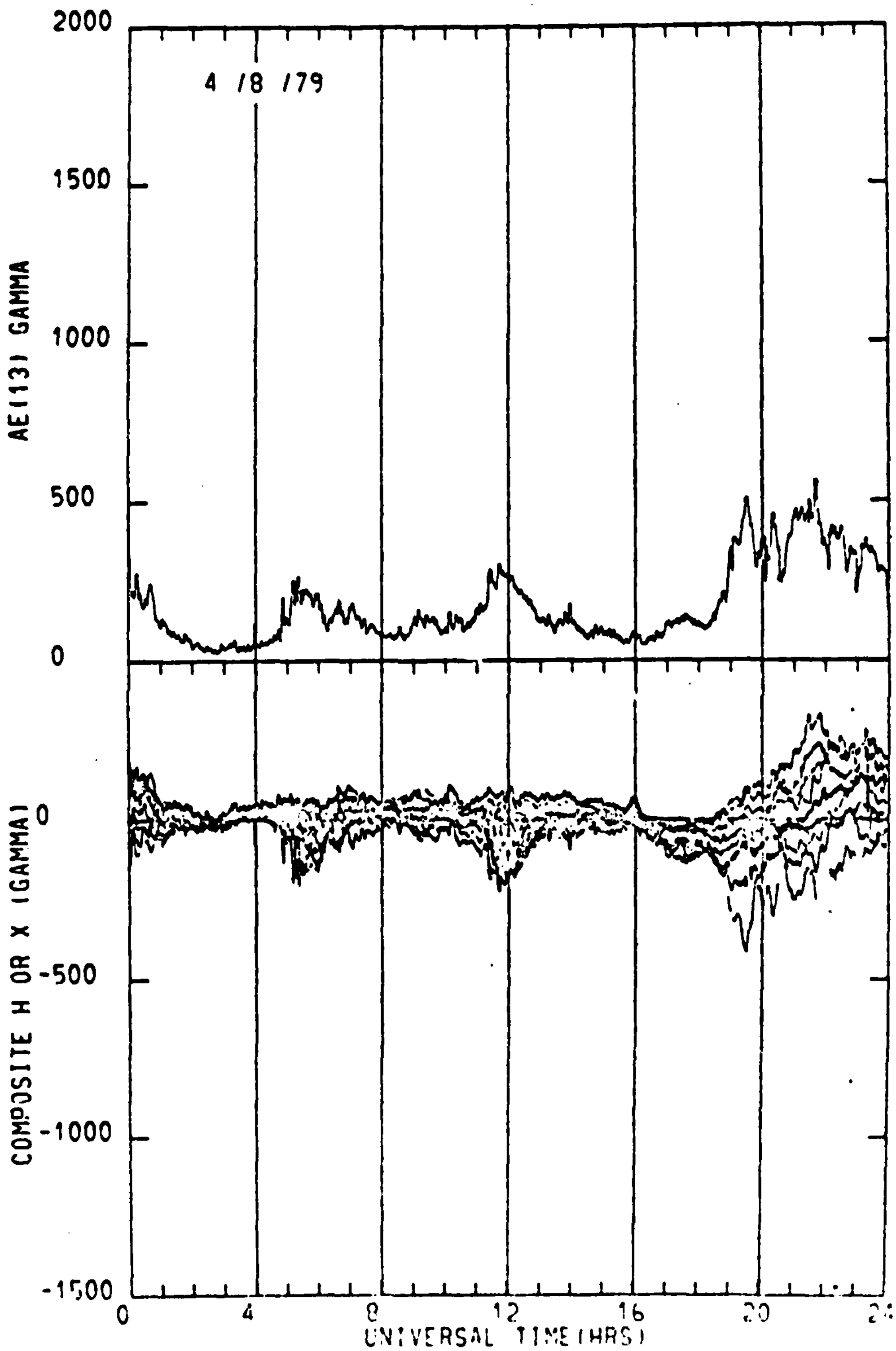


4 /5 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

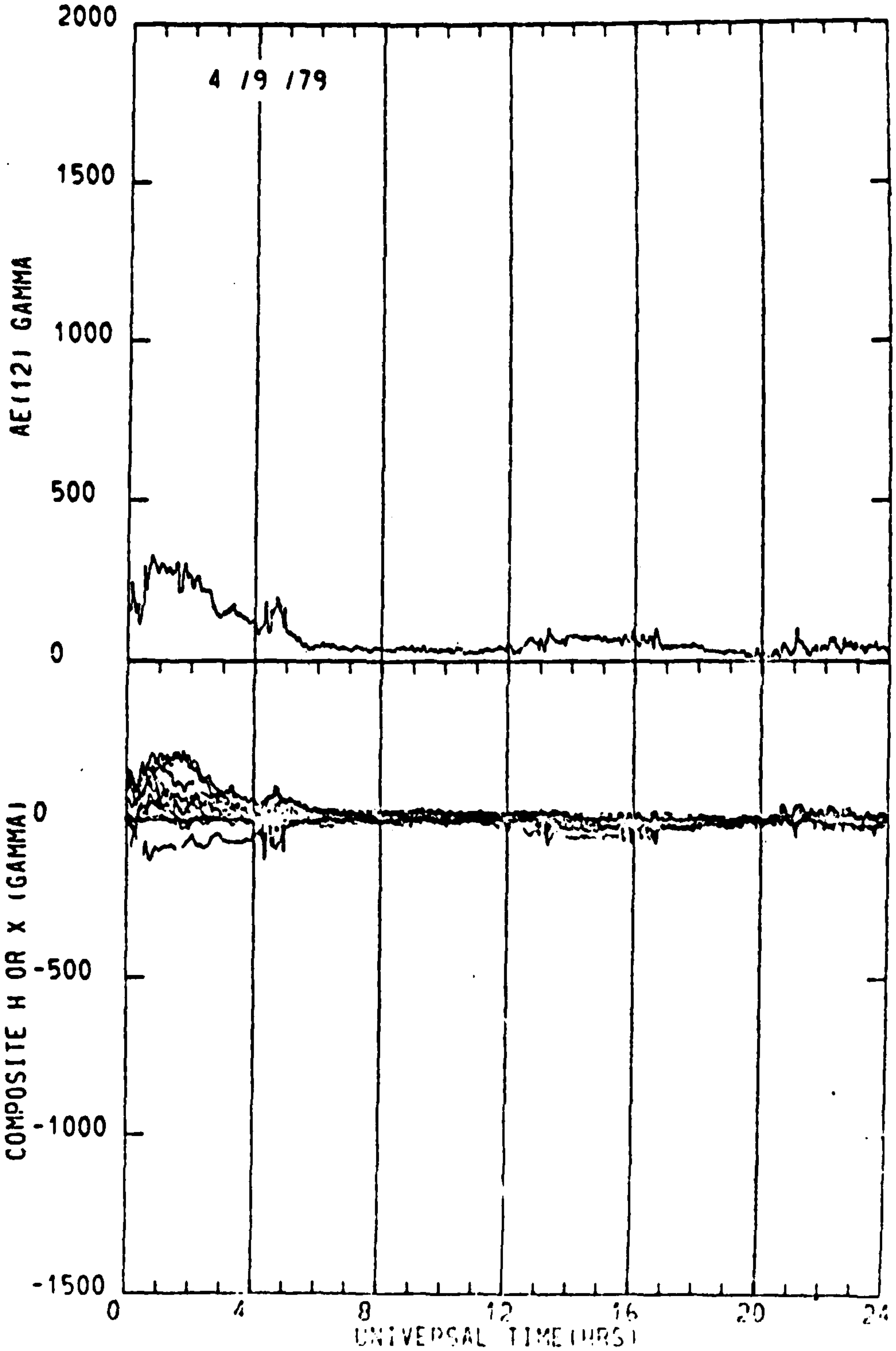


4 /6 /79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

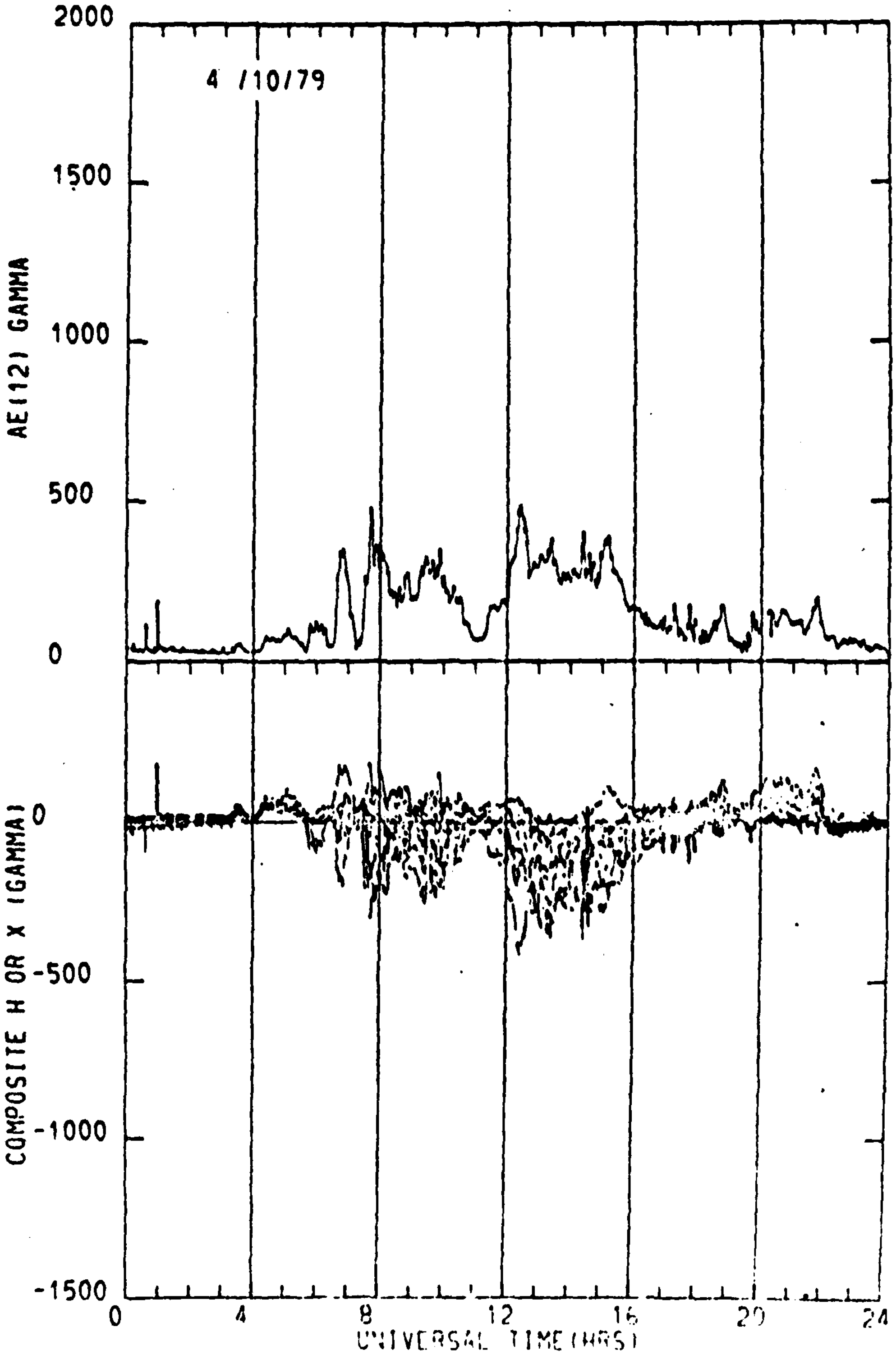

4 /7 /79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

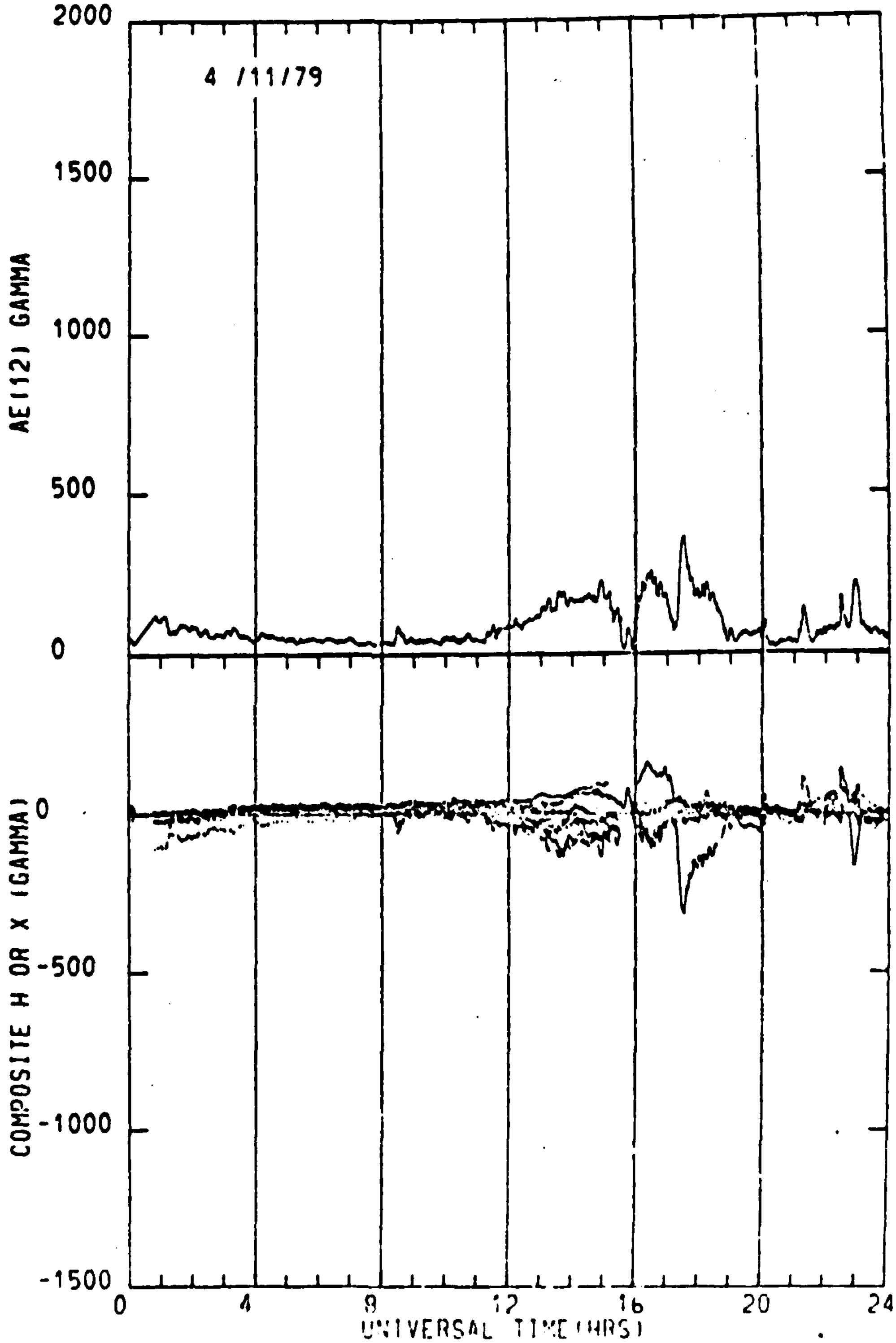


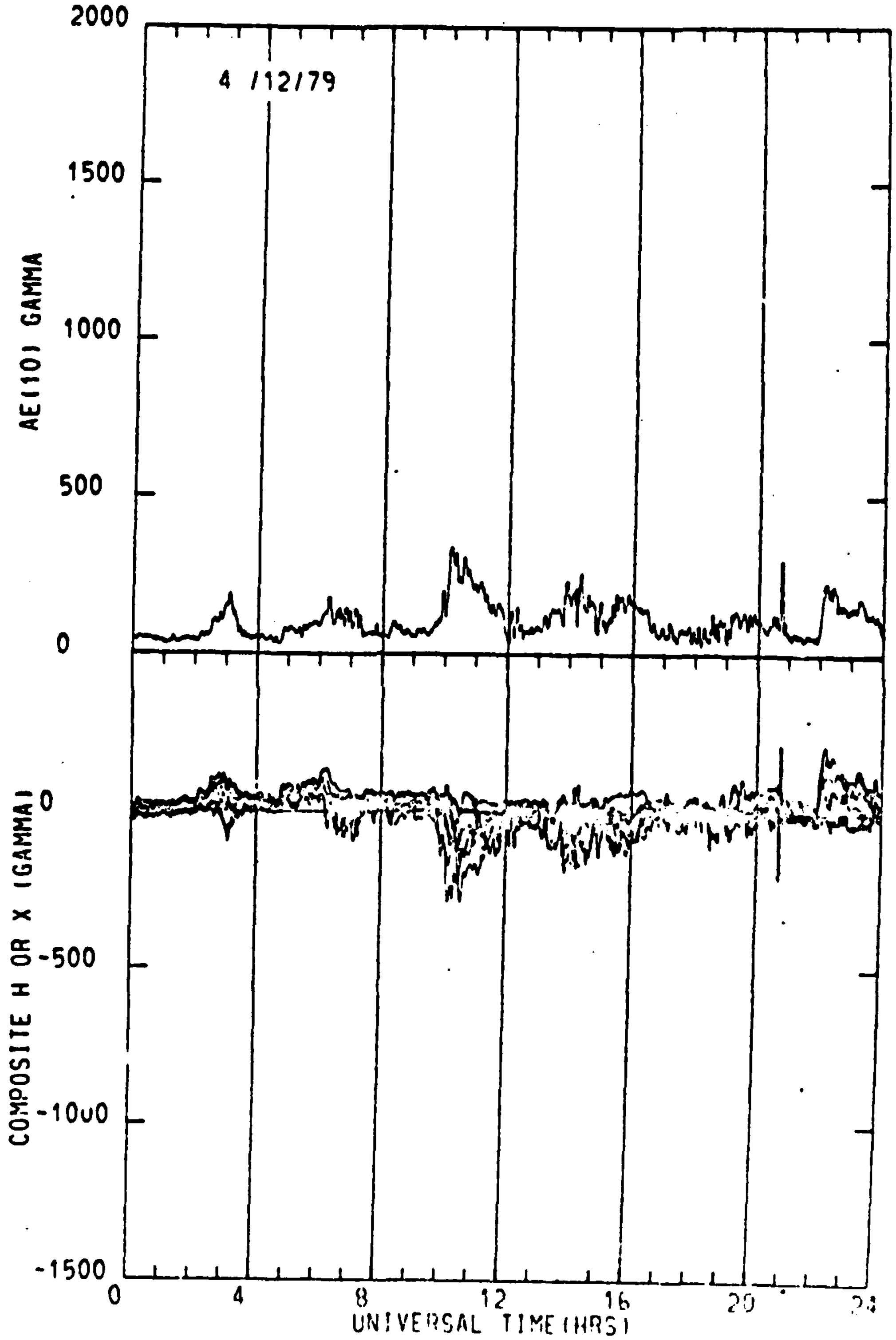
4 /8 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



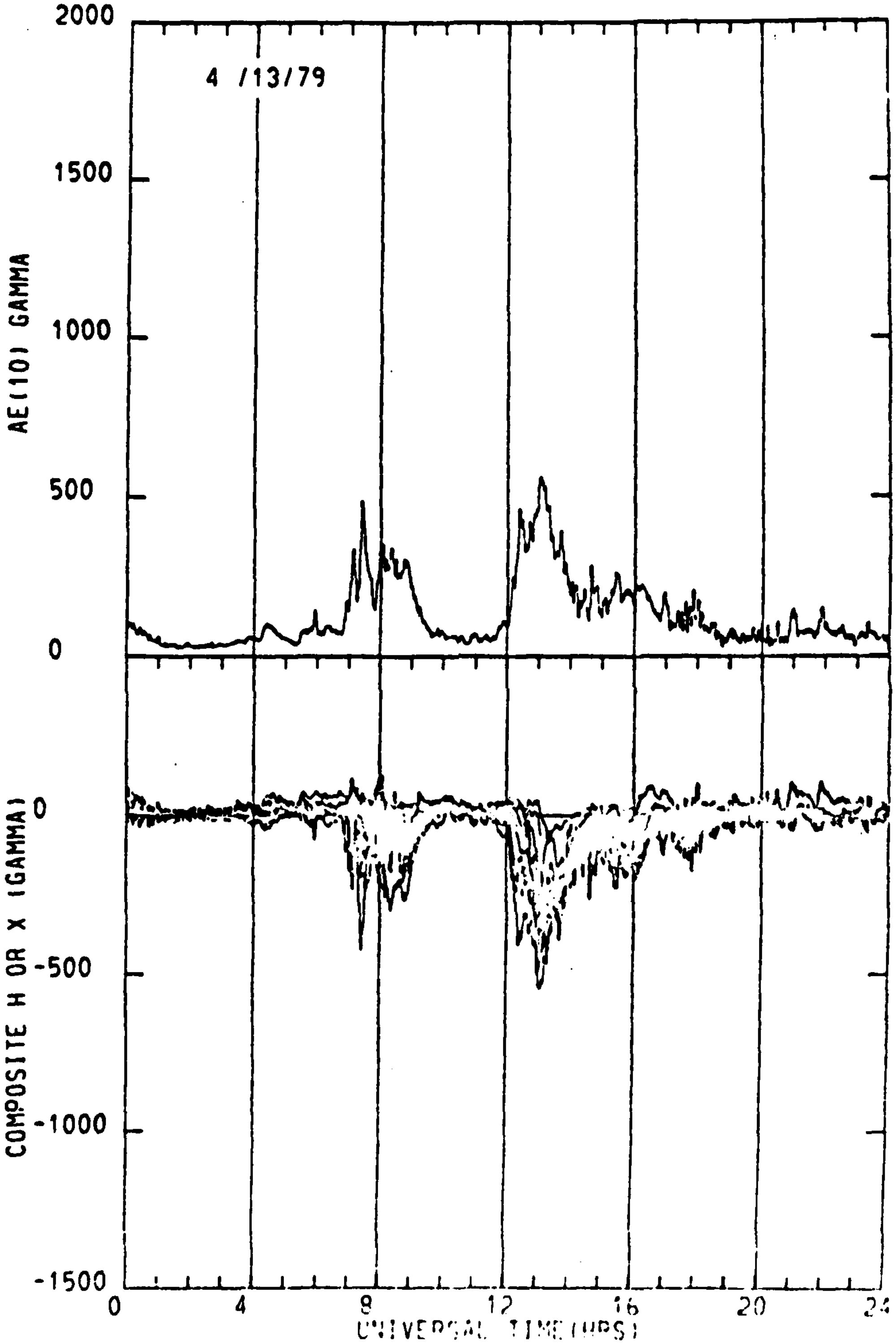
2000
1500
1000
500
0
-500
-1000
-1500
4 /19 /79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


4 /10/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

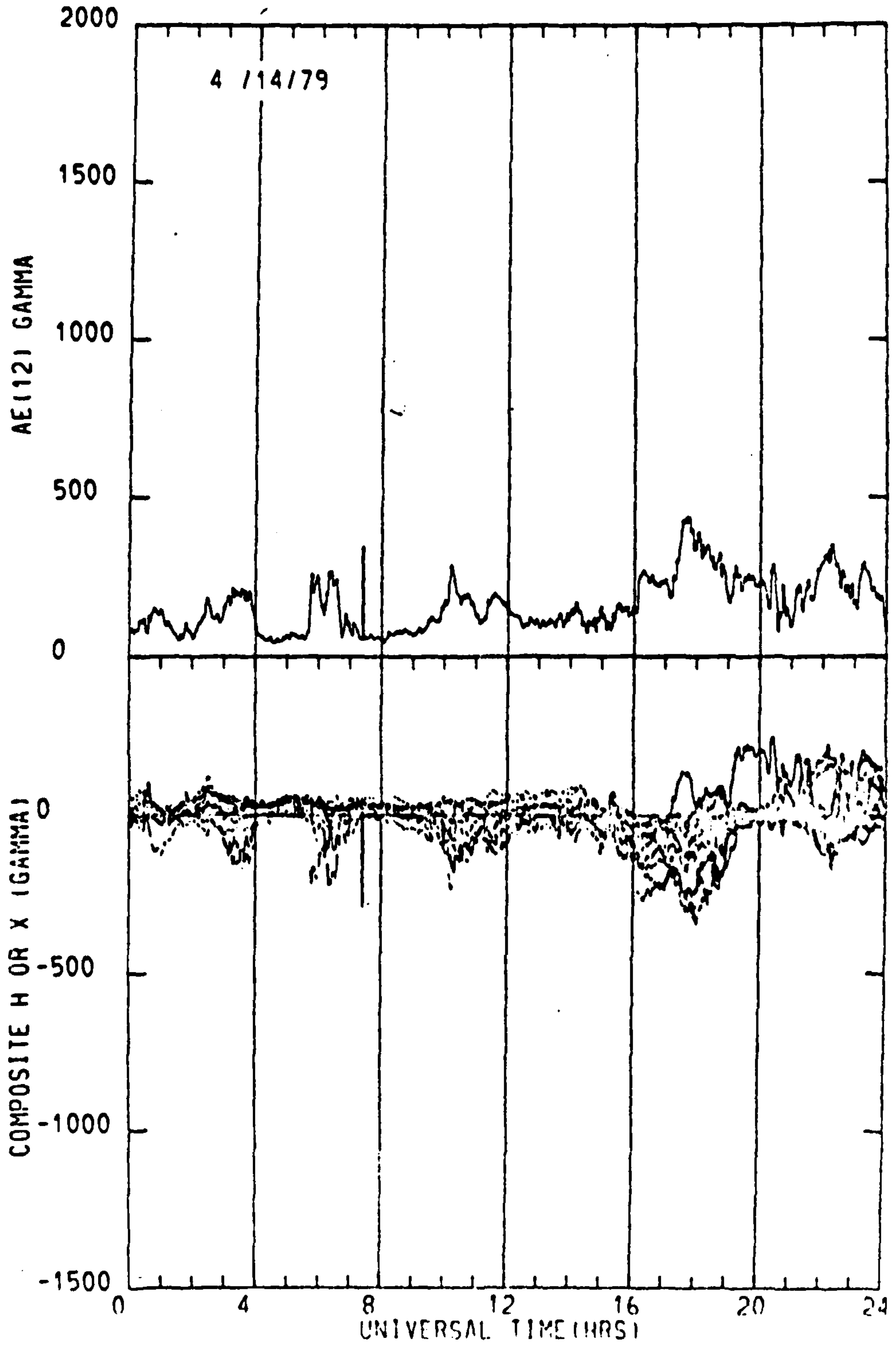

2000
4 /11/79
1500
AE(12) GAMMA
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

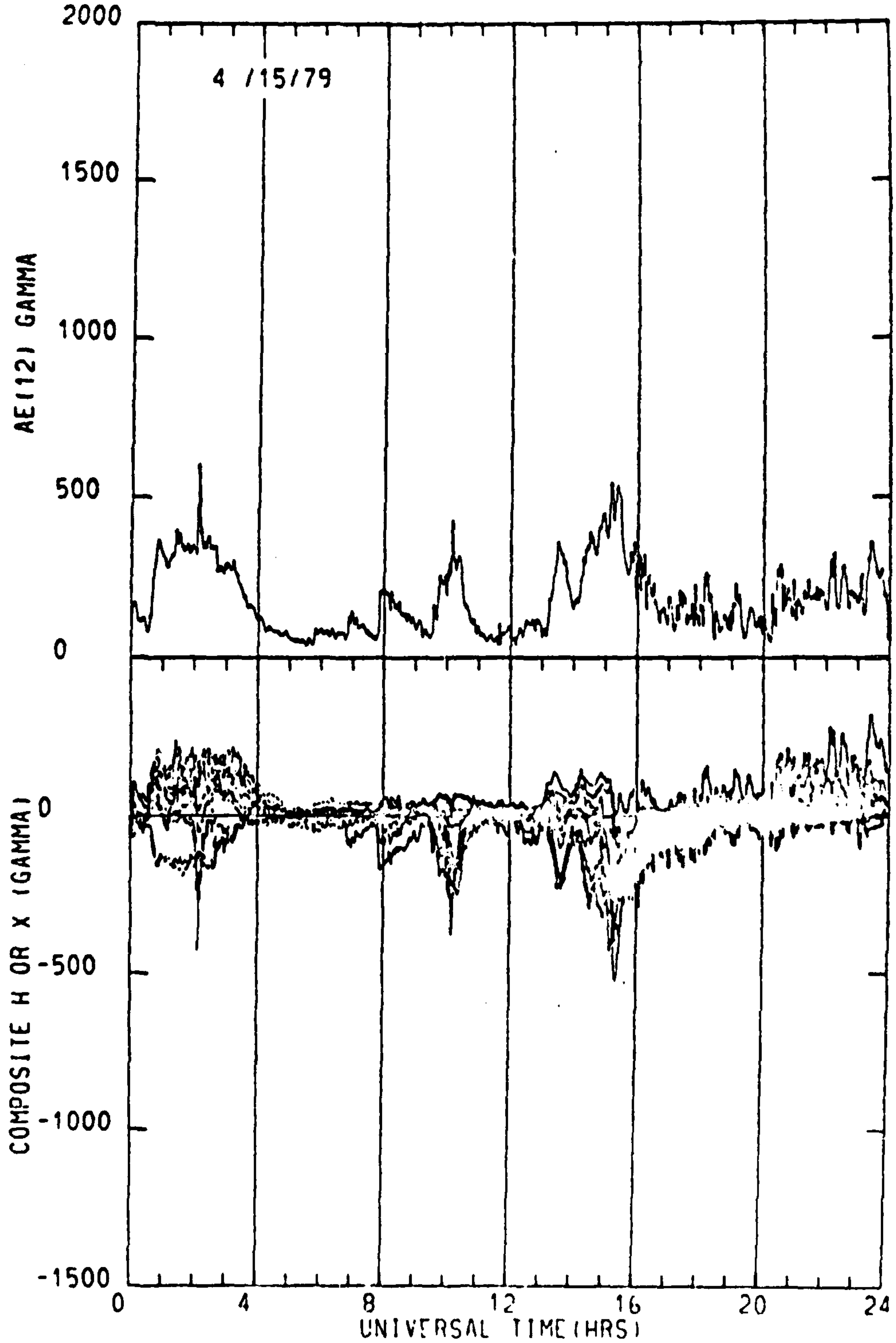


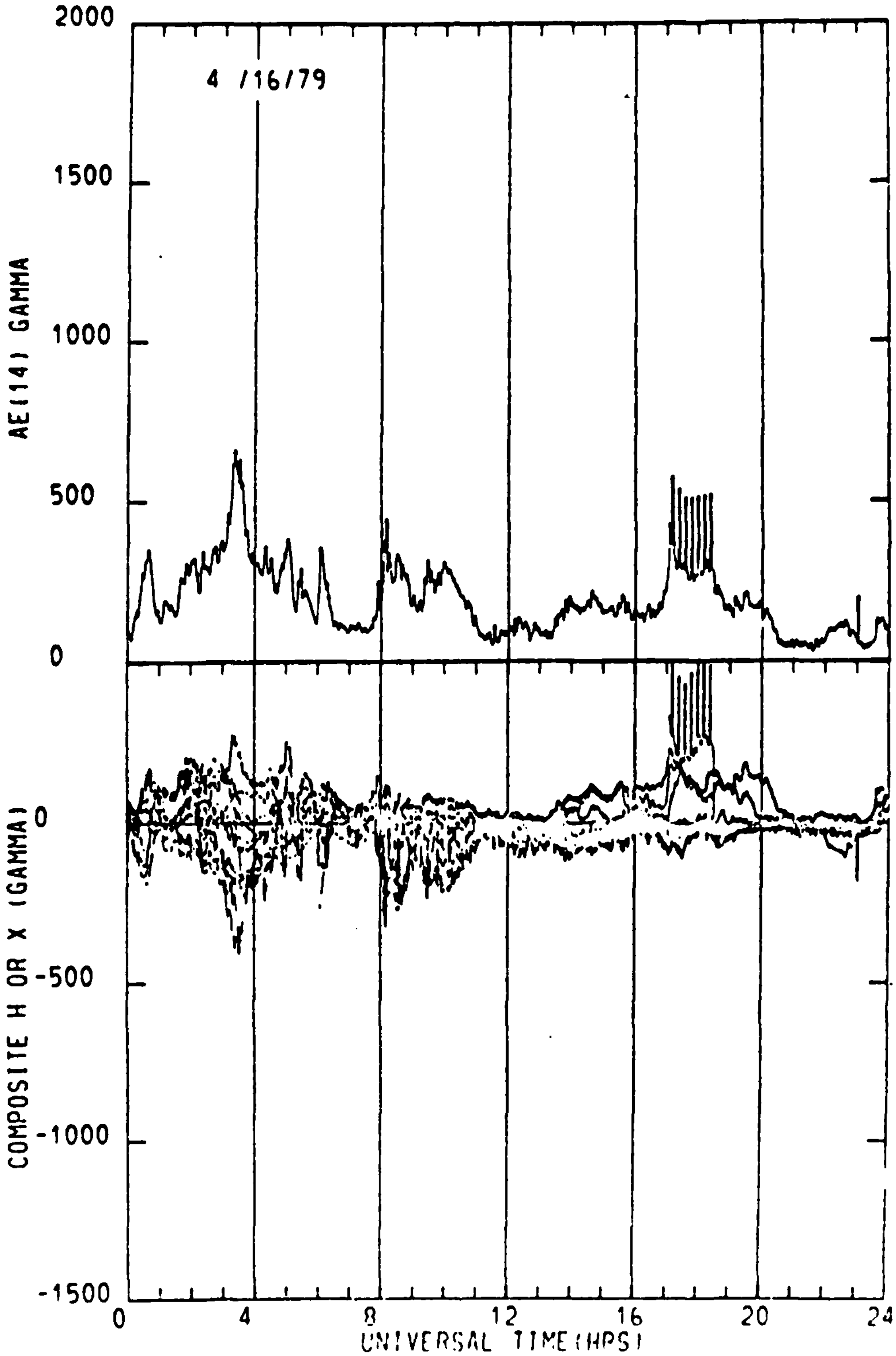
2000
1500
1000
500
0
AE(10) GAMMA
4 /12/79
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

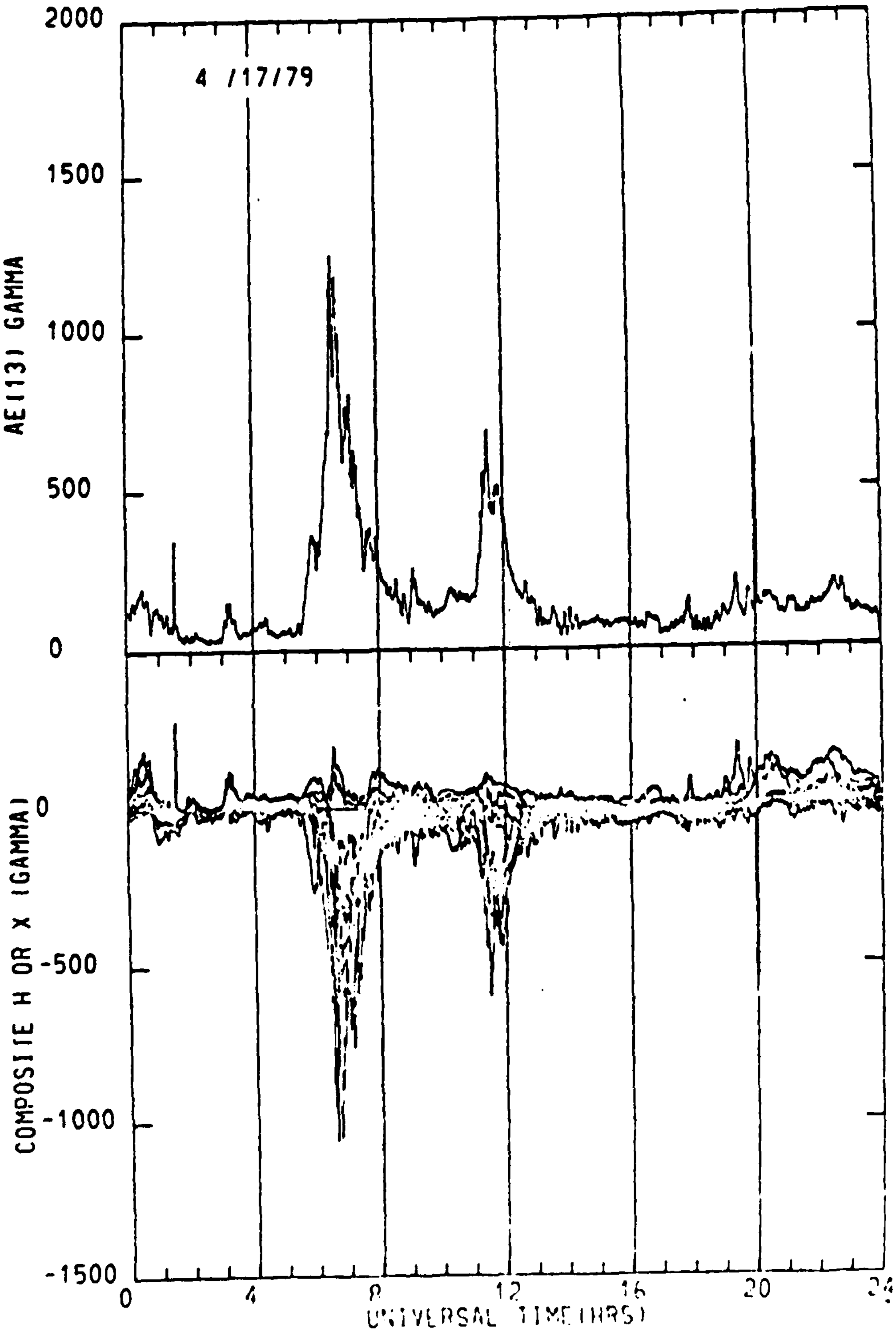


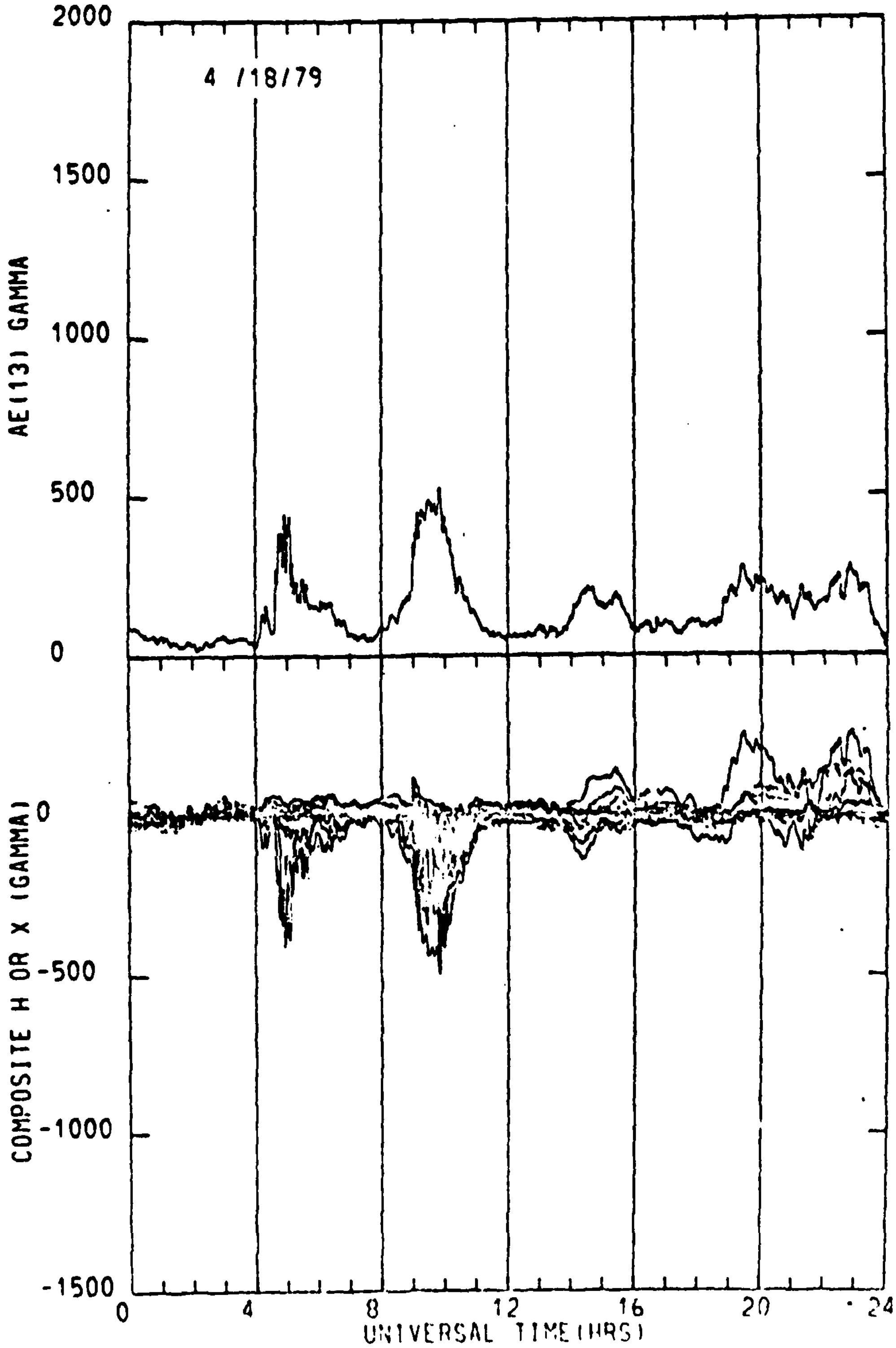
4 /13/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

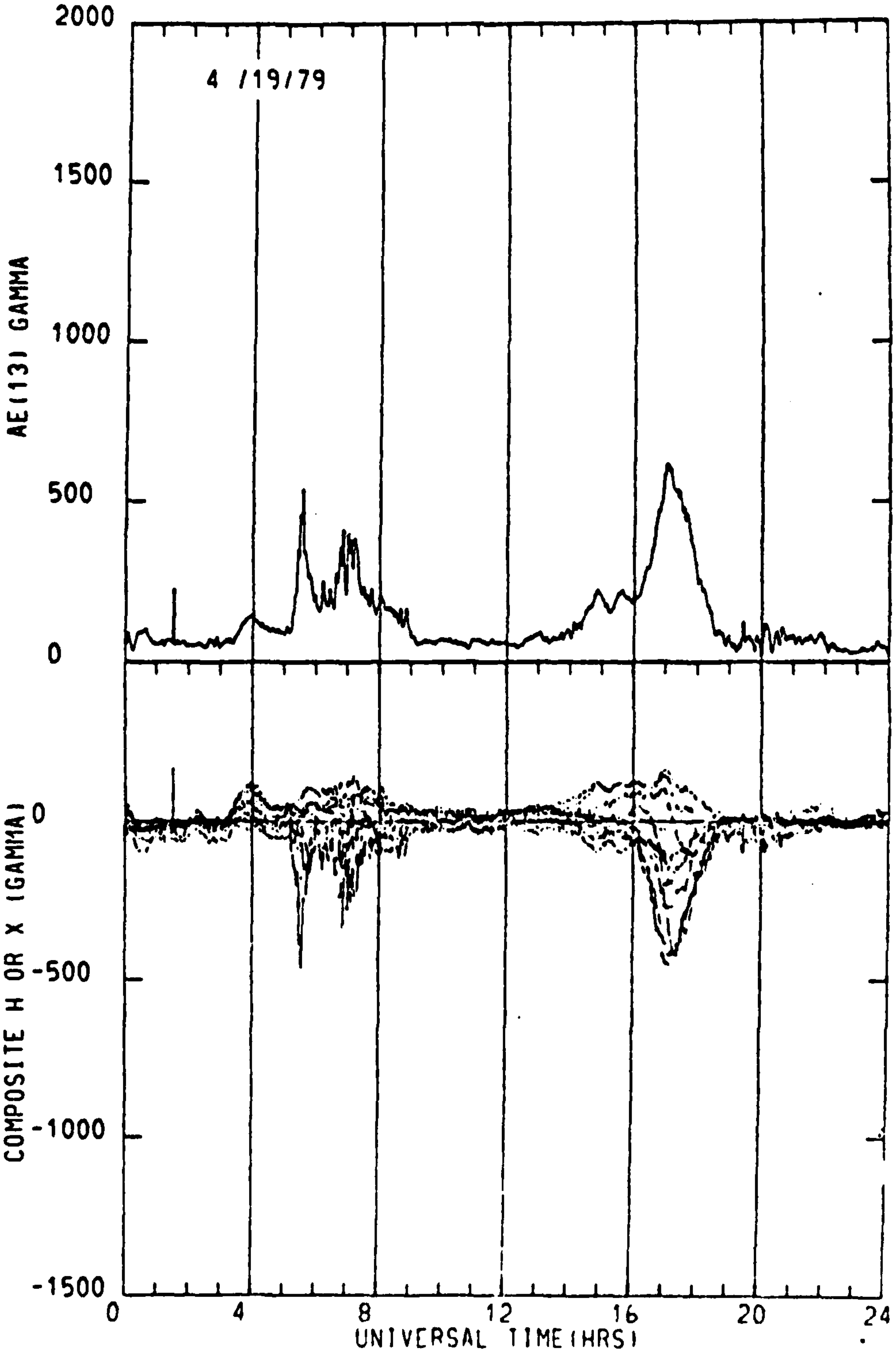

4 /14/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


4 /15/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

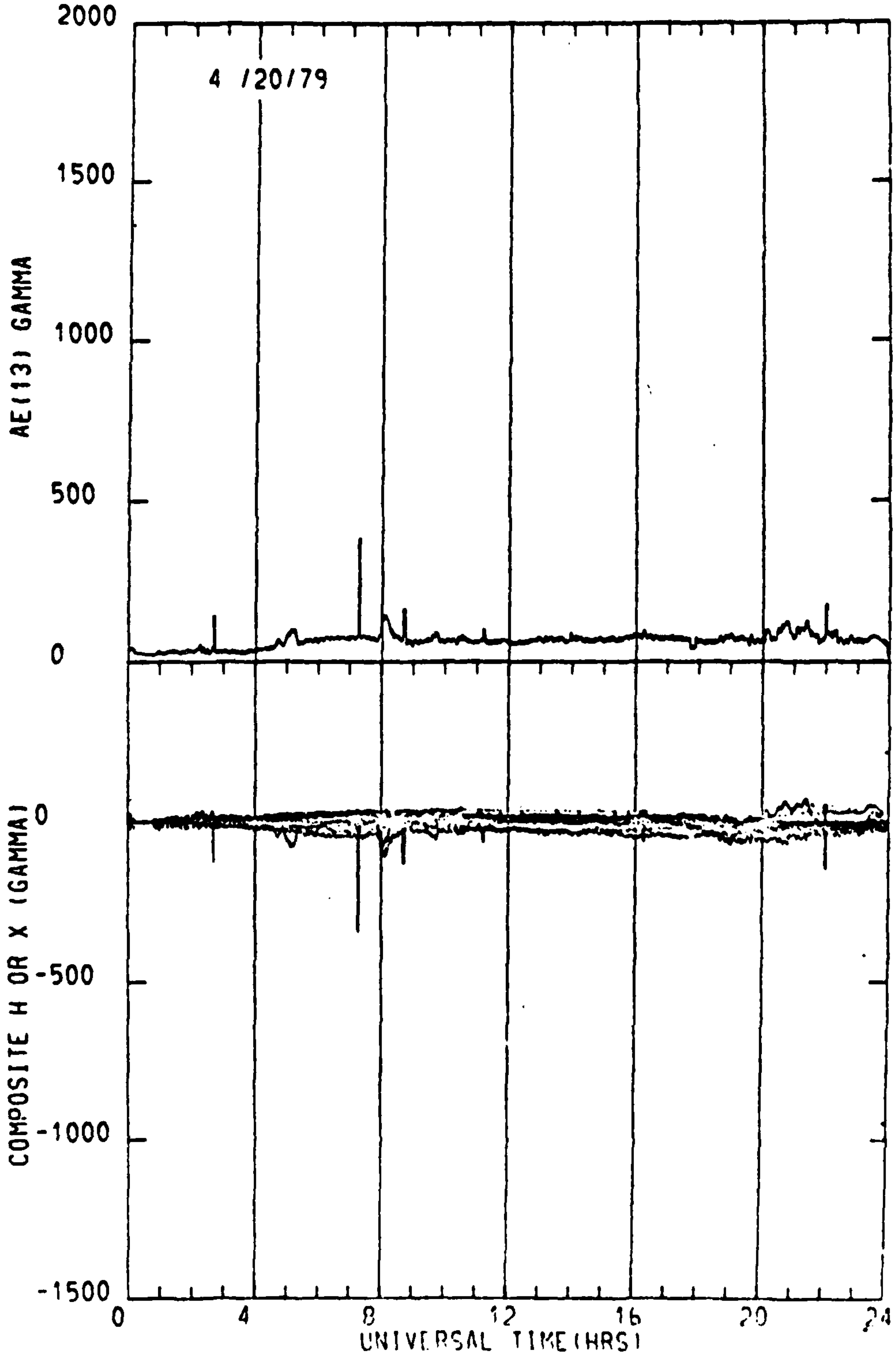

4 /16/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

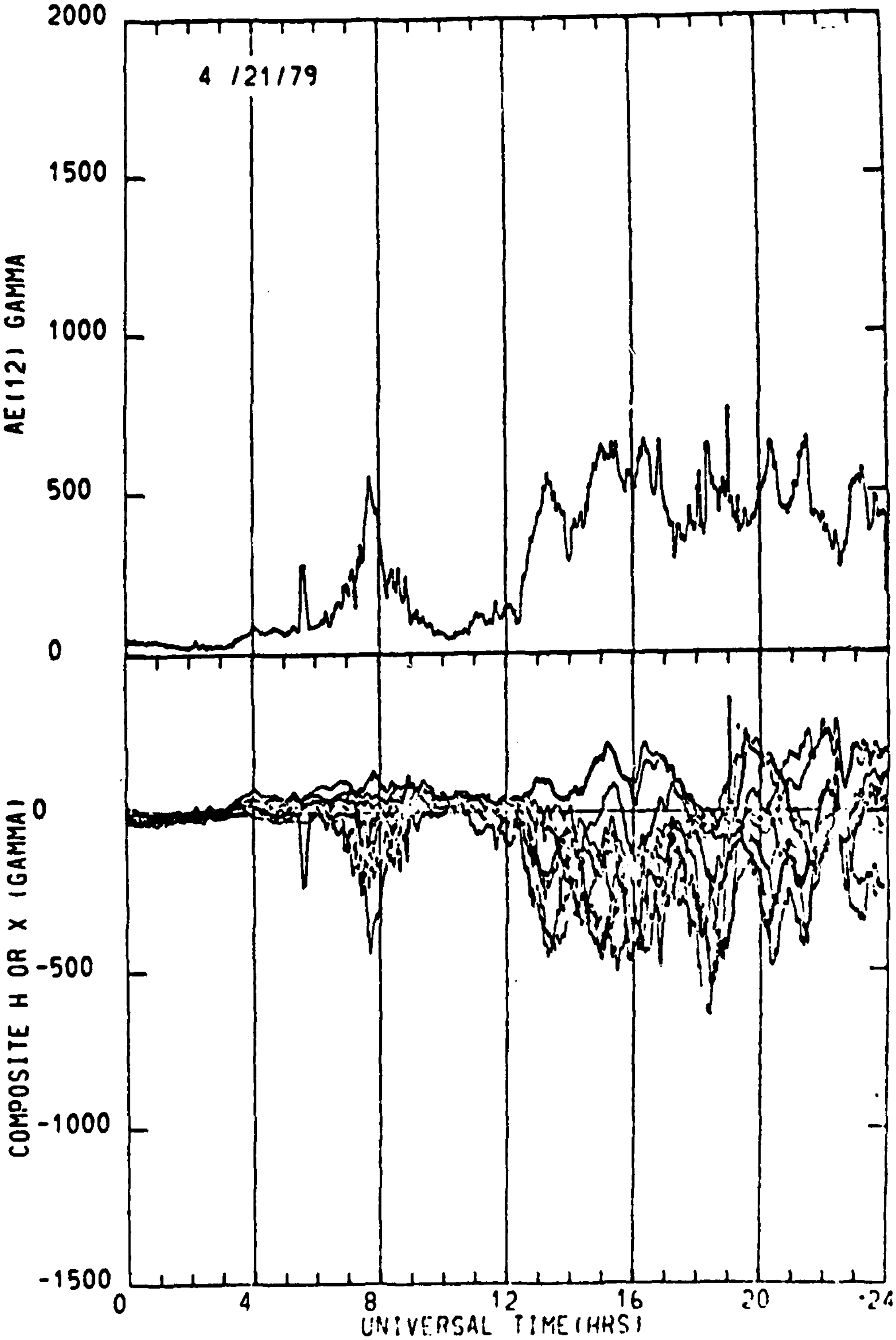

4 /17/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

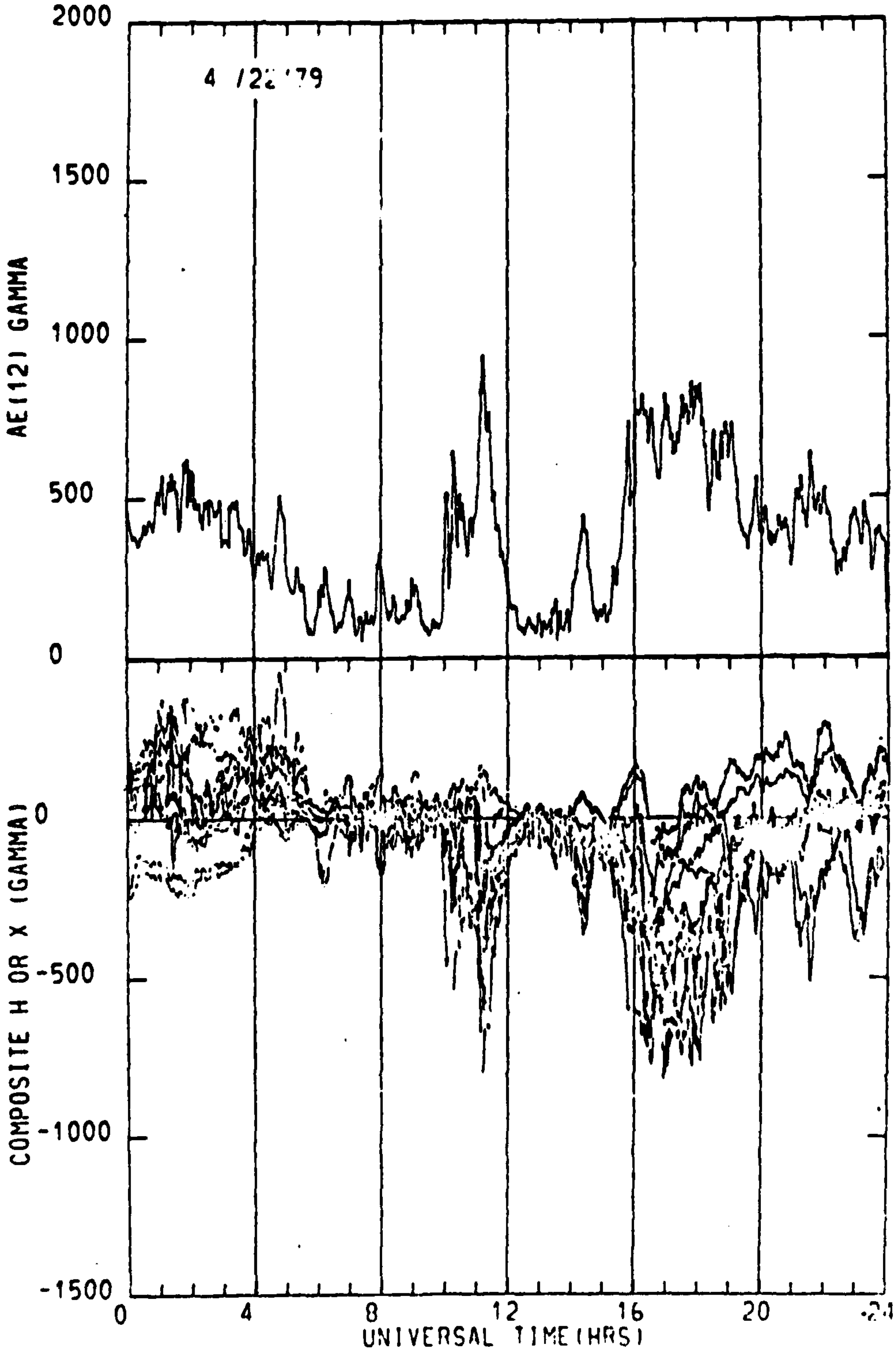

4 /18/79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

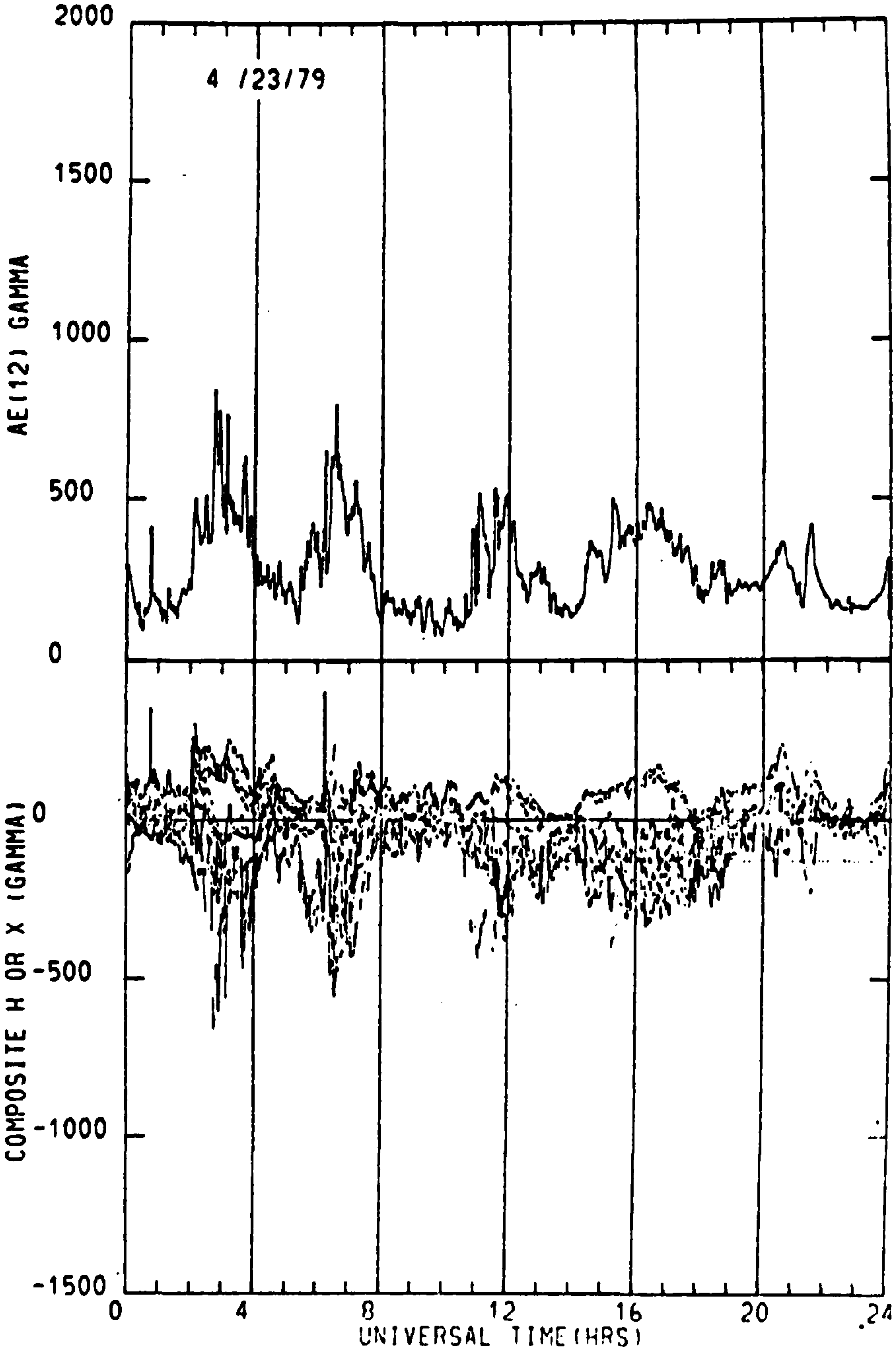


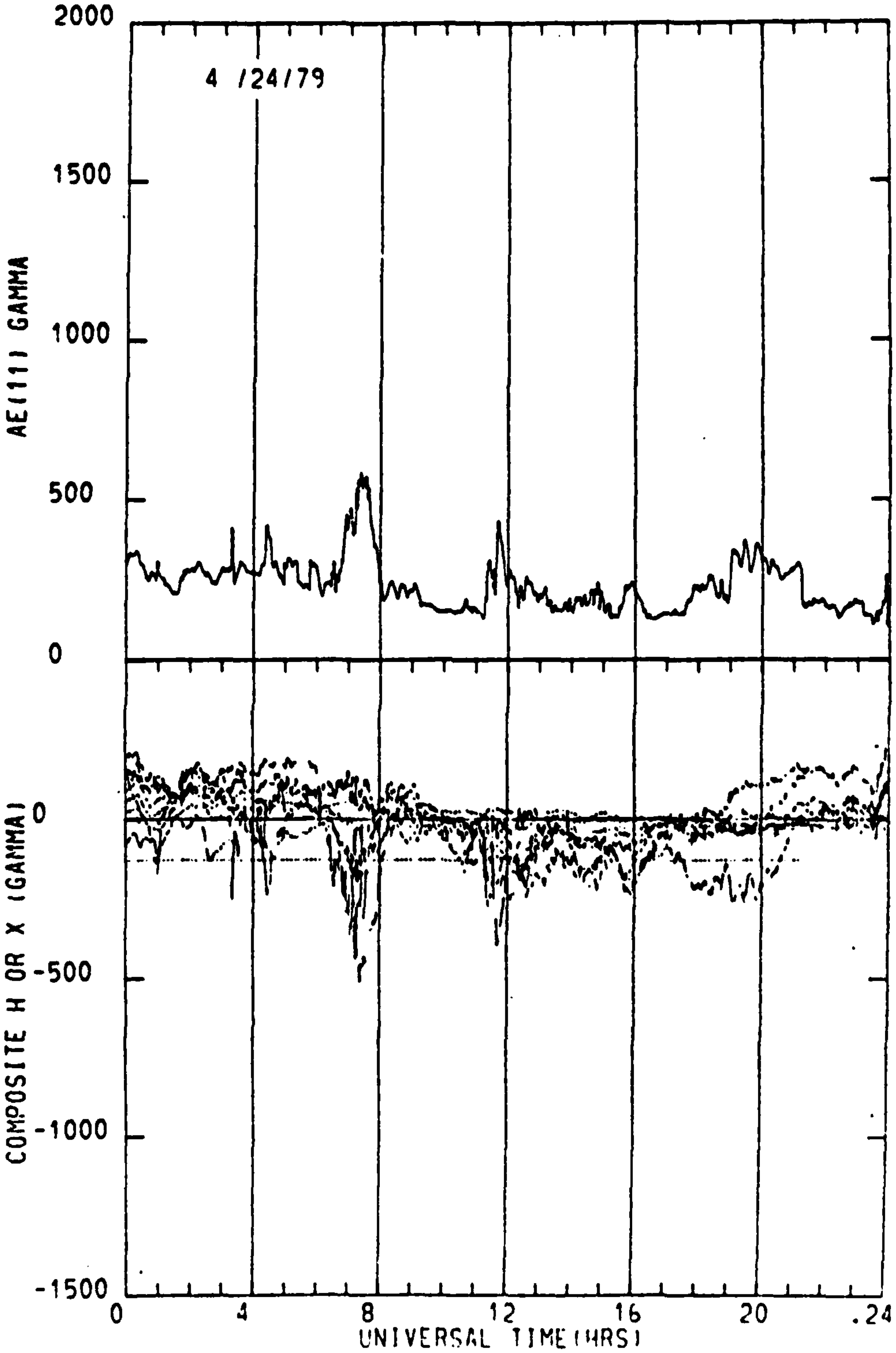
4 /19/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

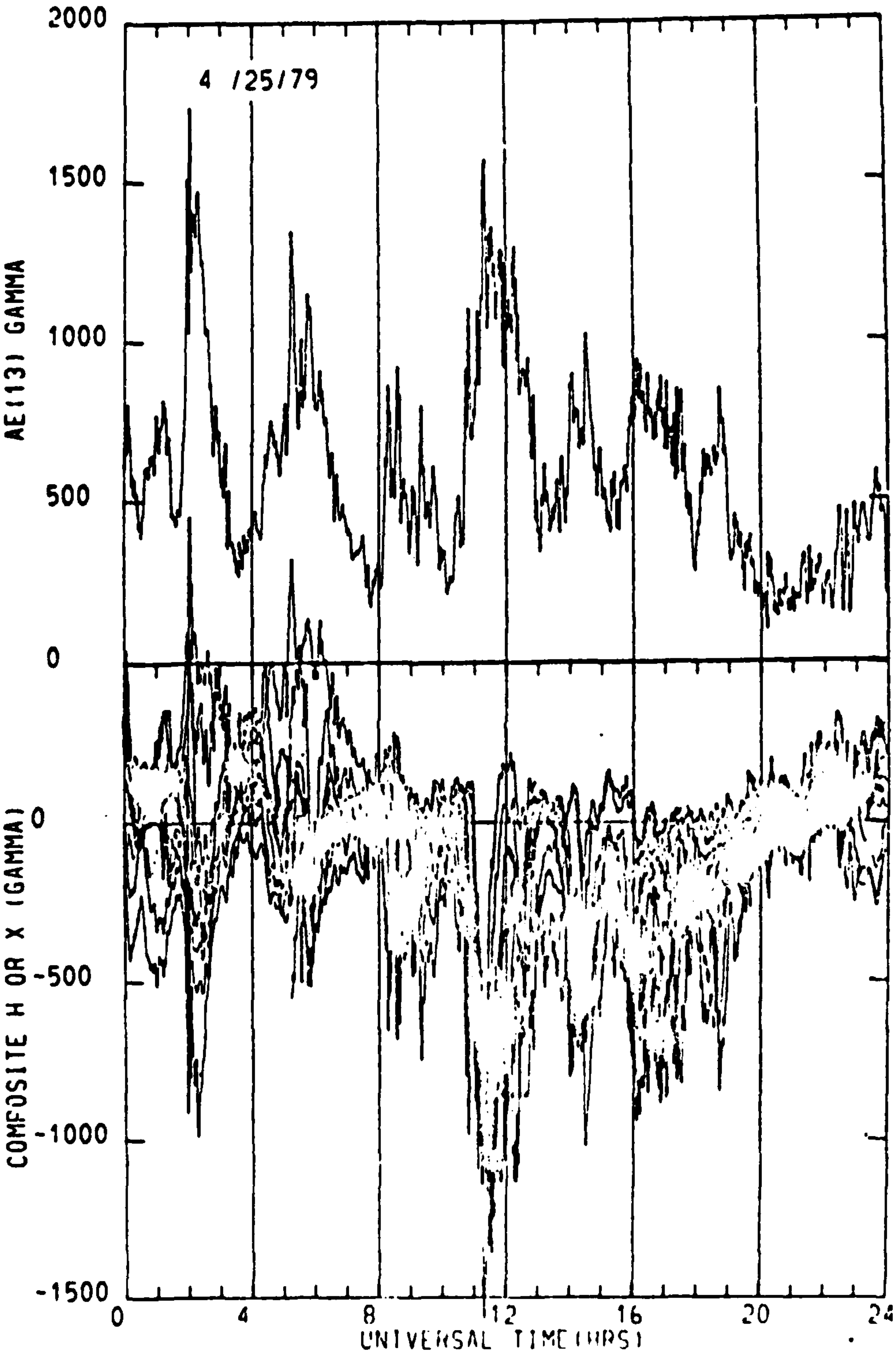

4 /20/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

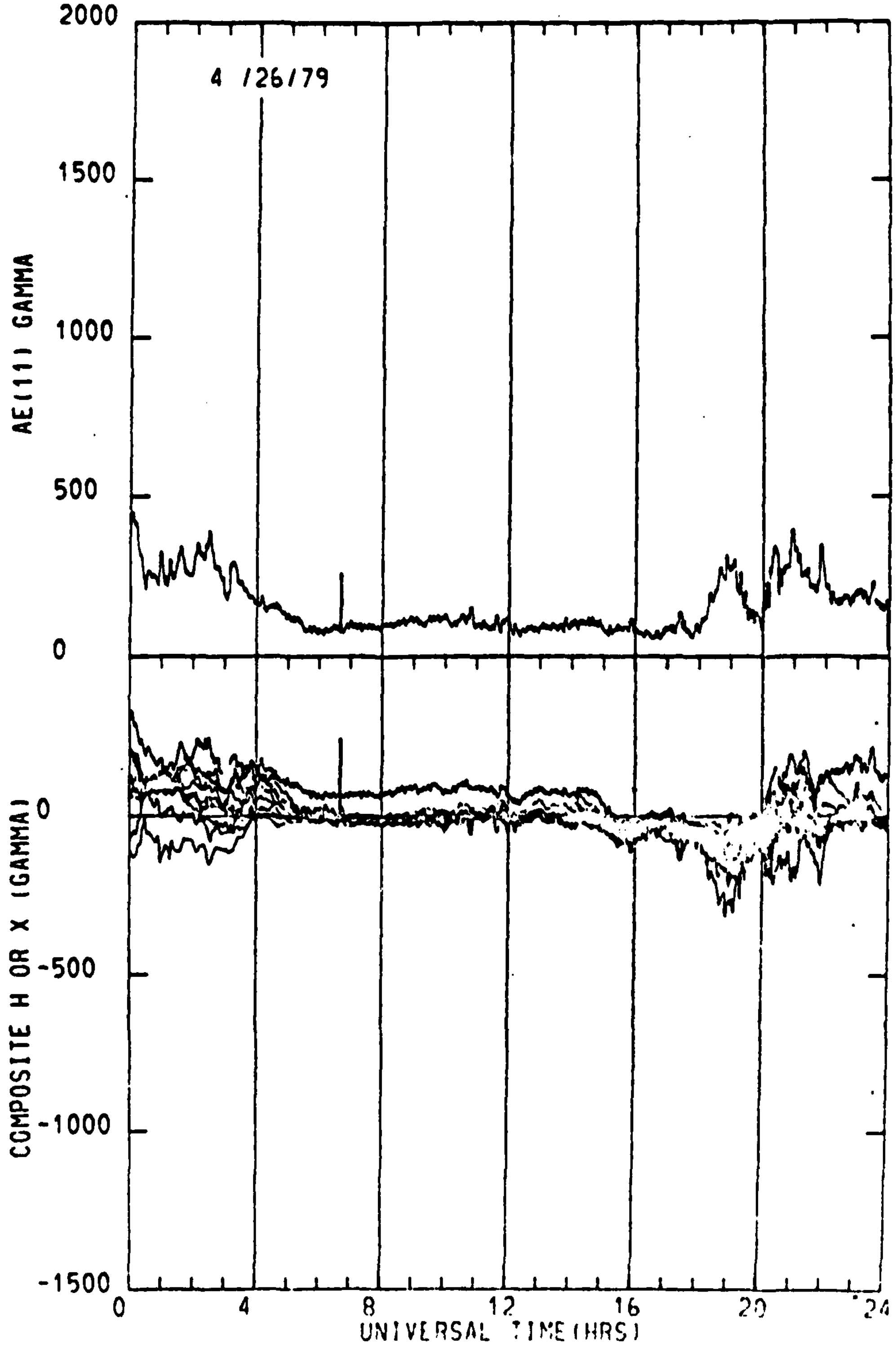

4 /21/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

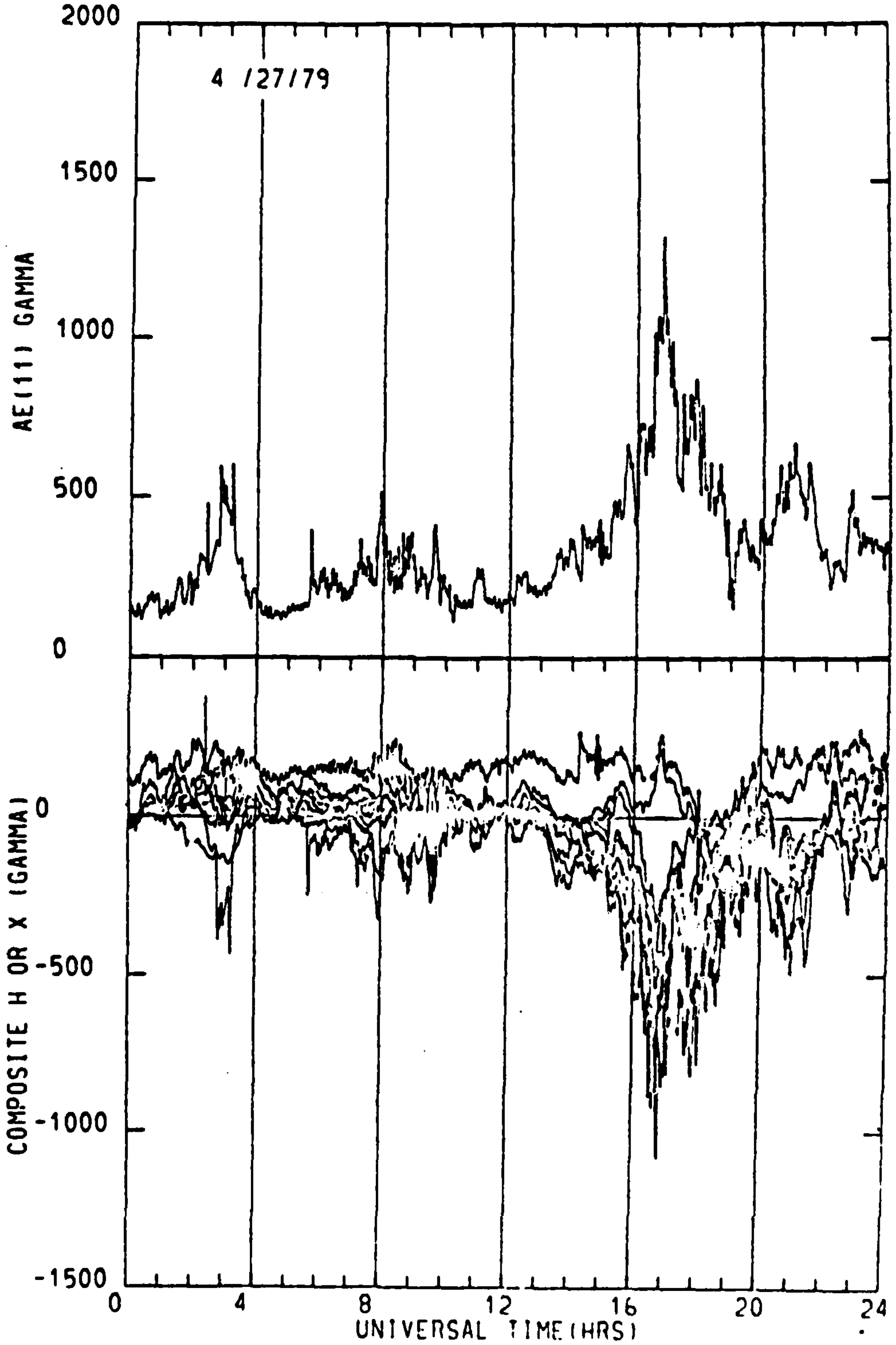

4 /23/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

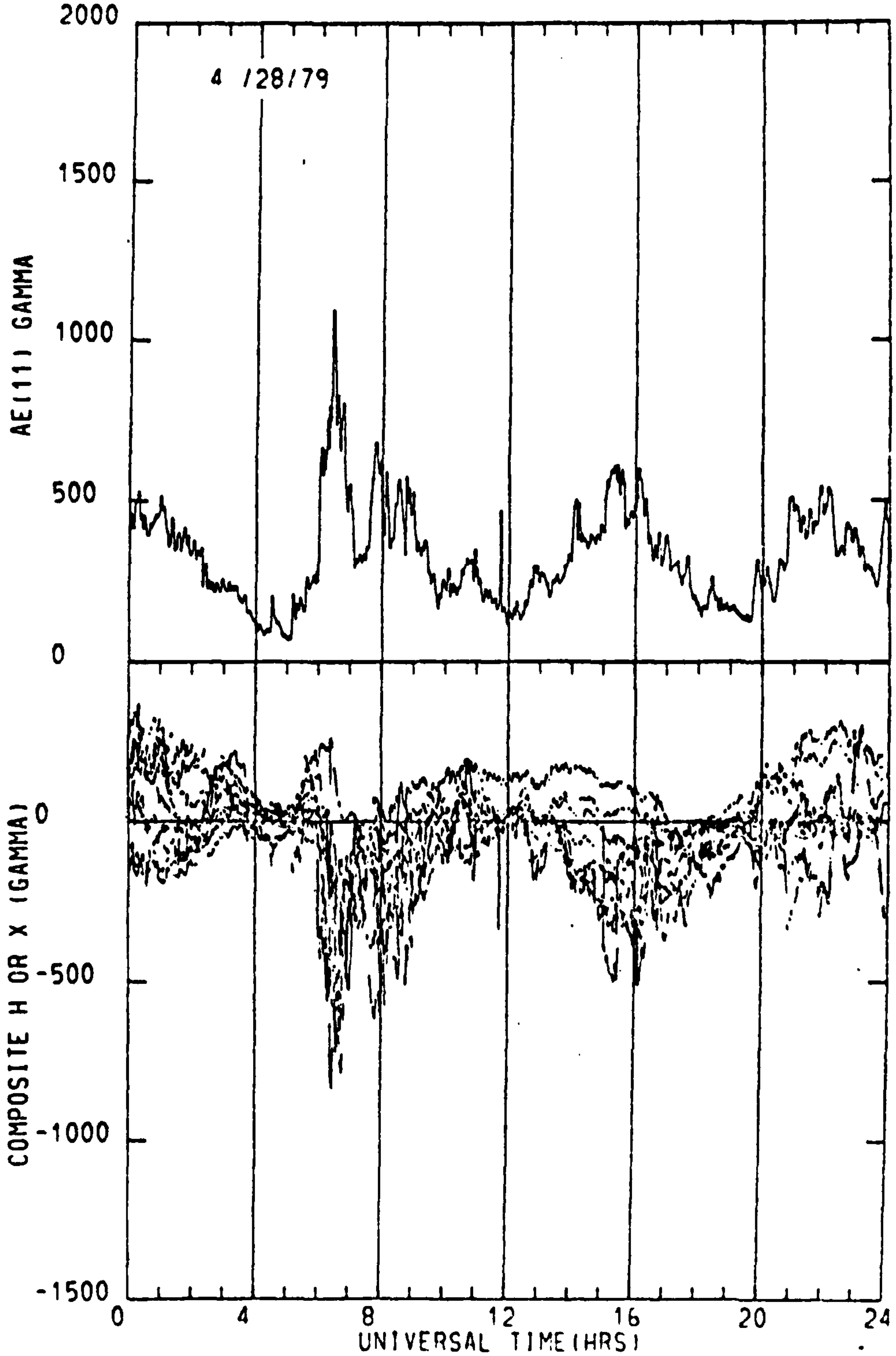

4 /24/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
.24
UNIVERSAL TIME(HRS)

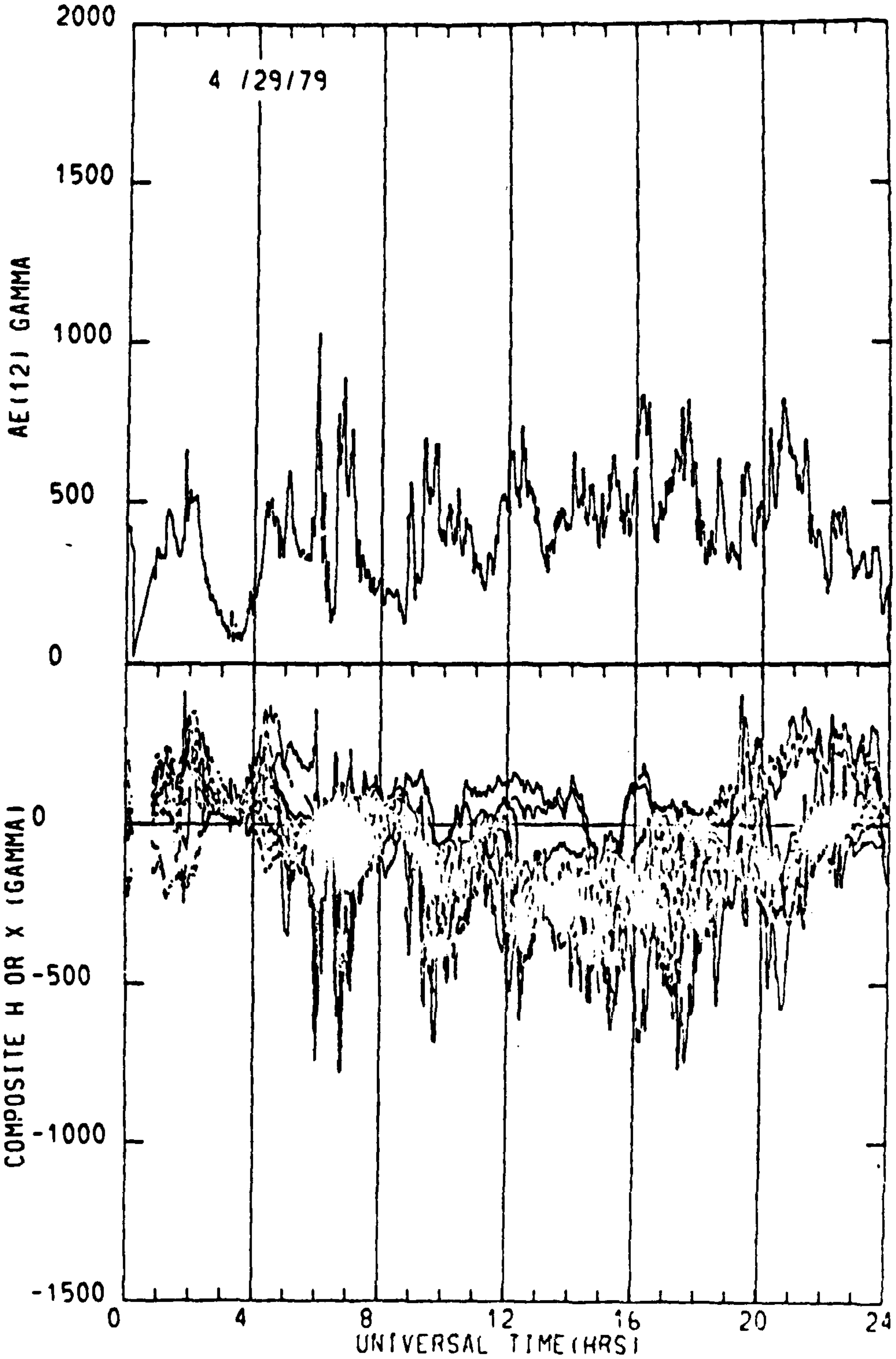

4 /25/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



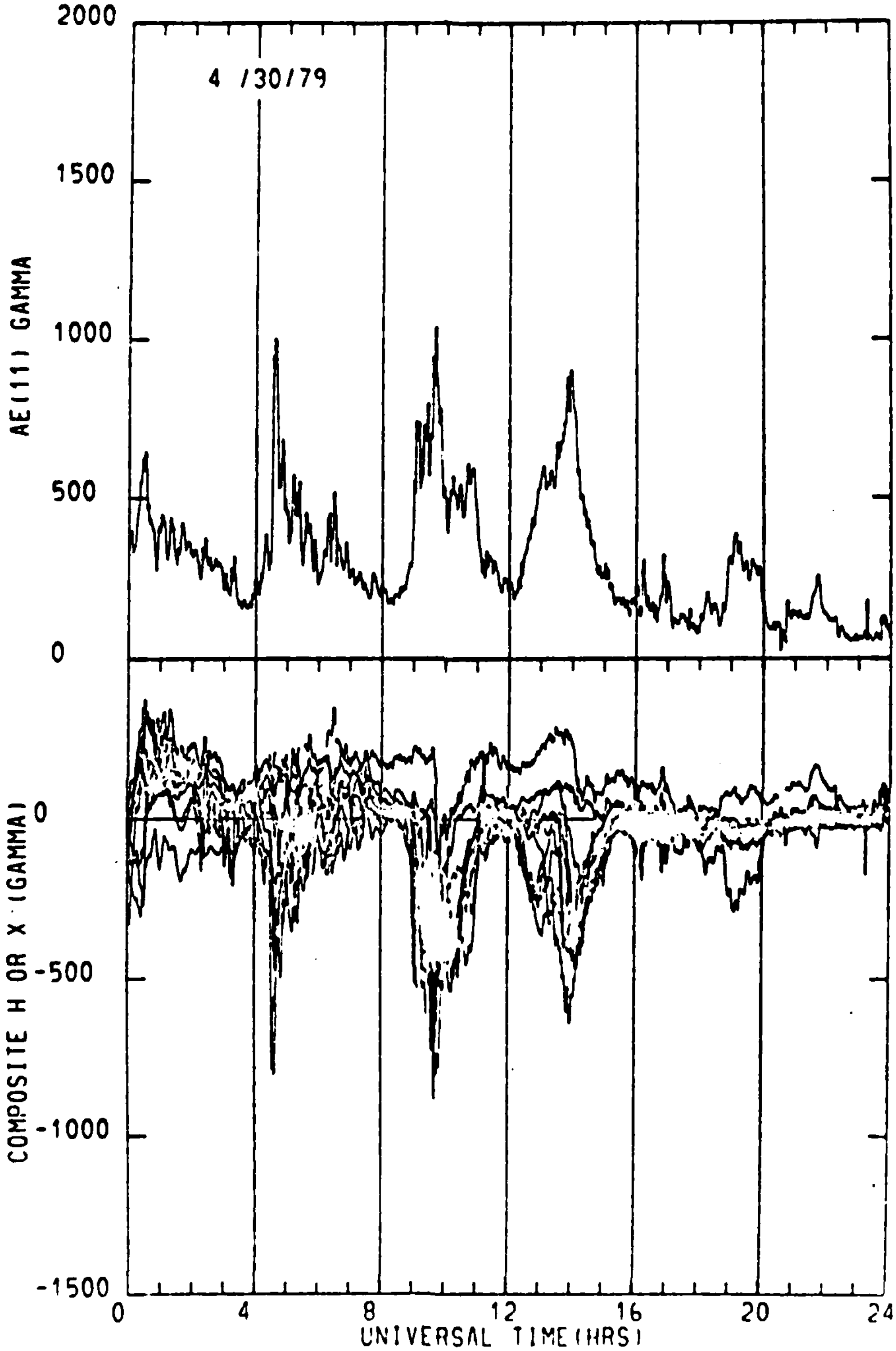
2000
4 /26/79
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

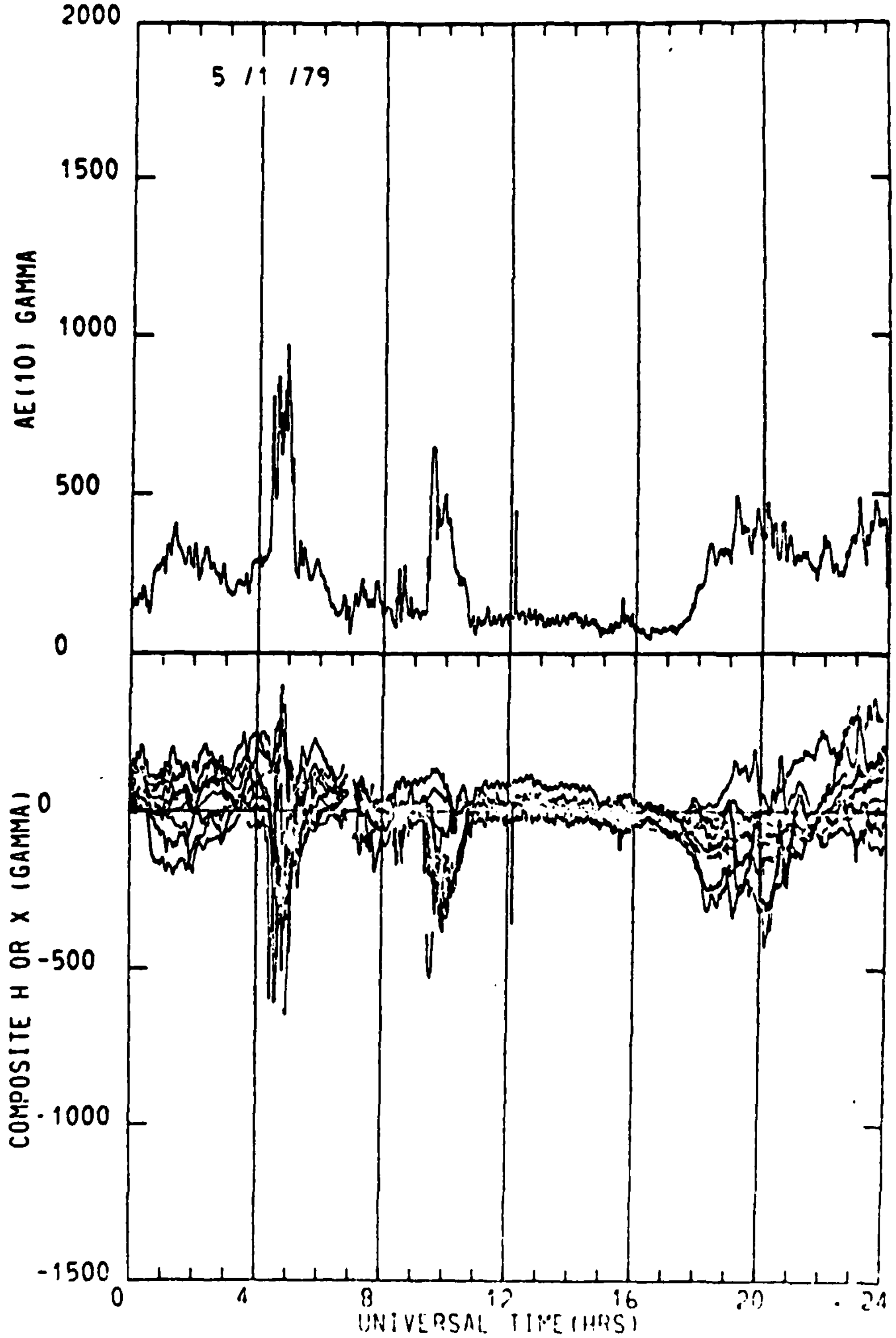

4 /27/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


4 /28/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

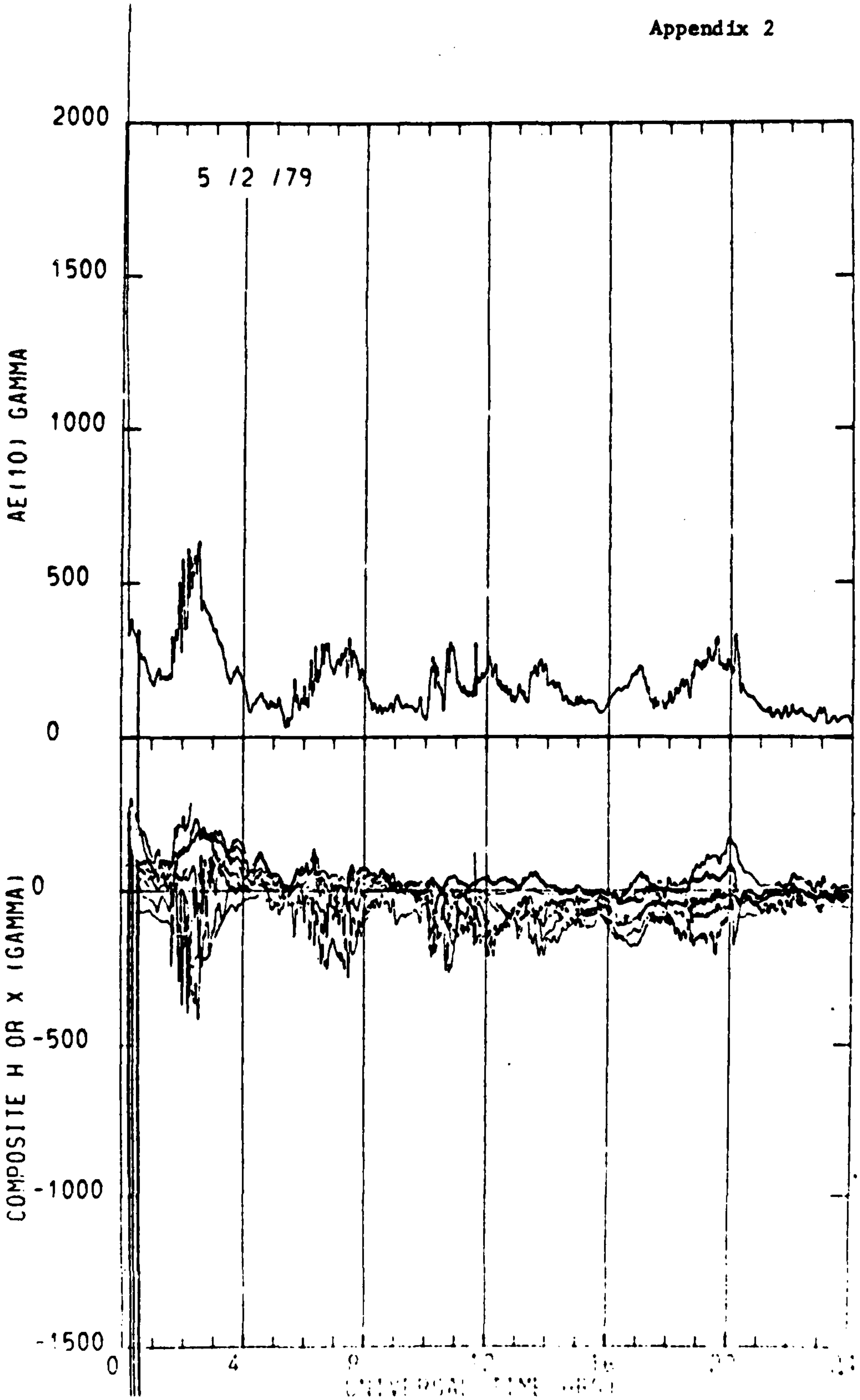


4 /29/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

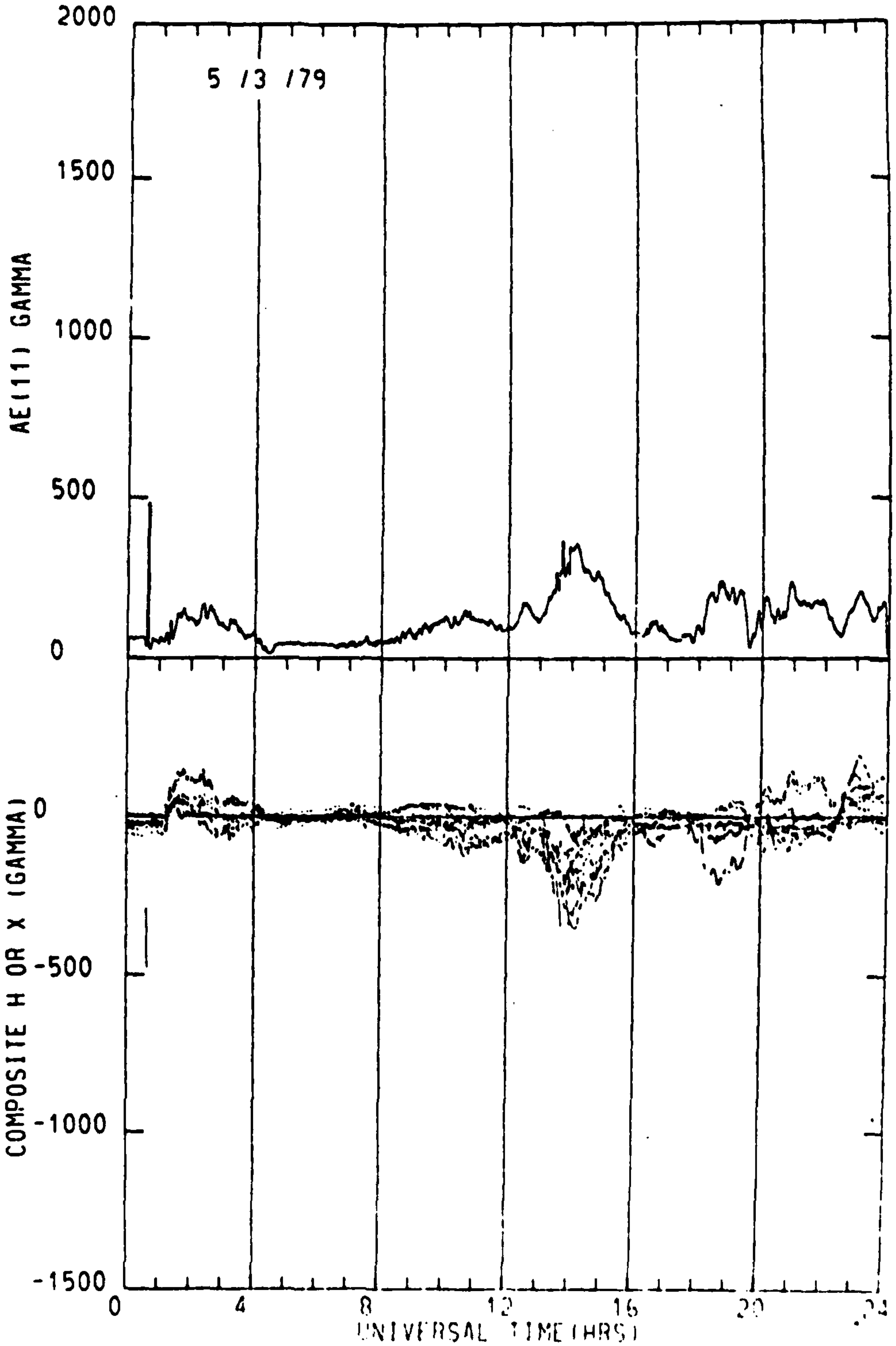

4 /30/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



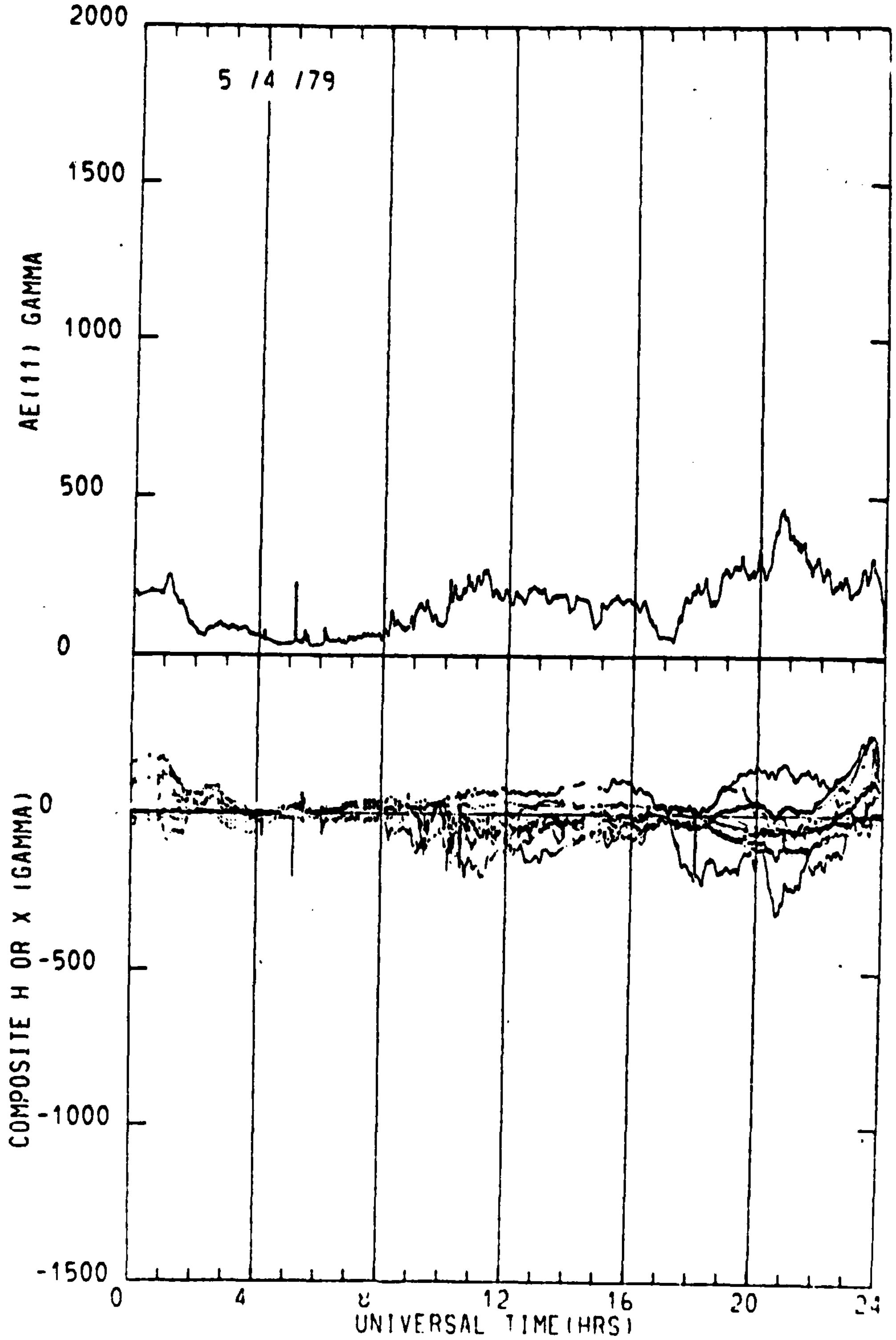
5 /1 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



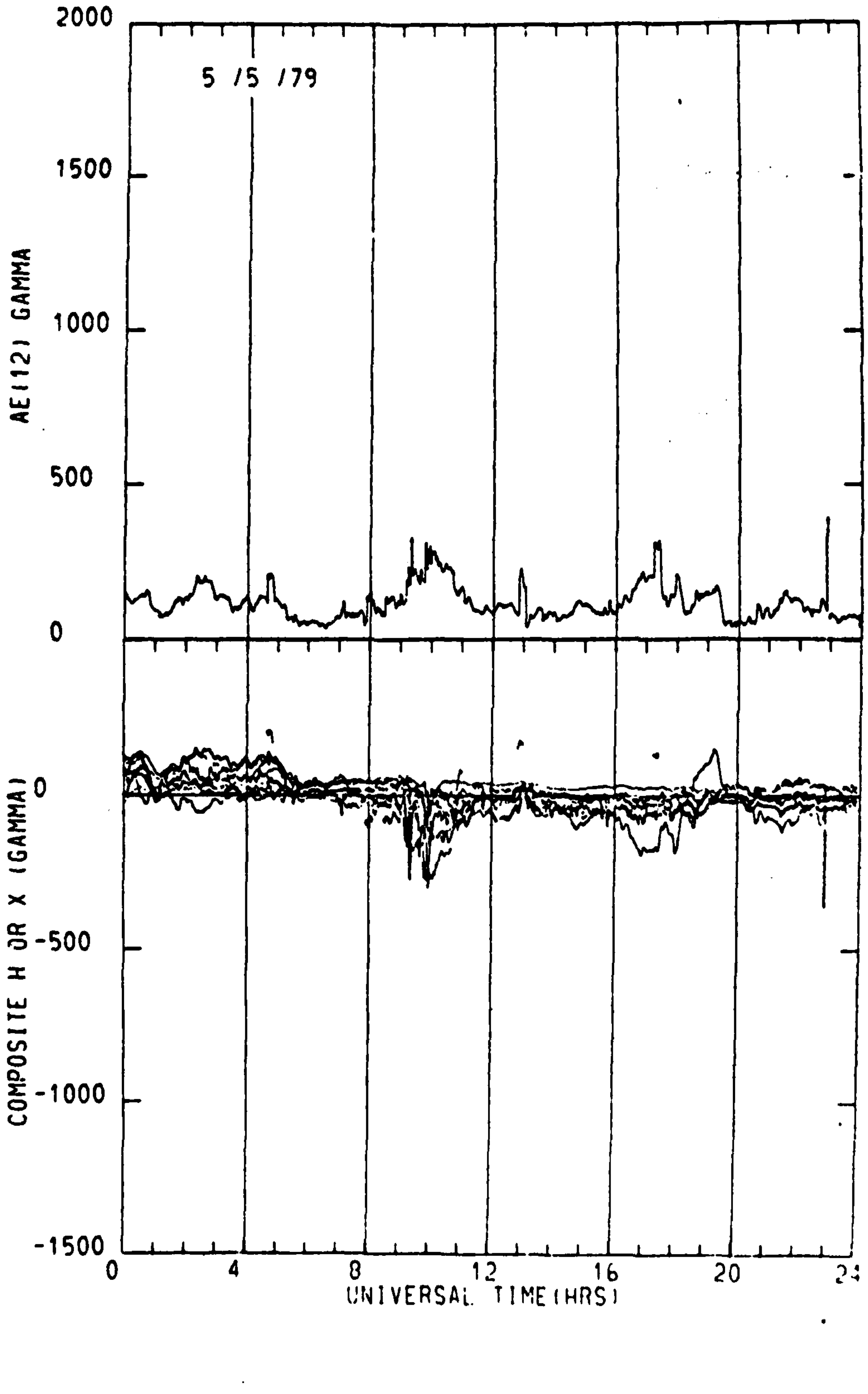
5 /2 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(10) GAMMA
COMPOSITE H OR X (GAMMA)
0
4

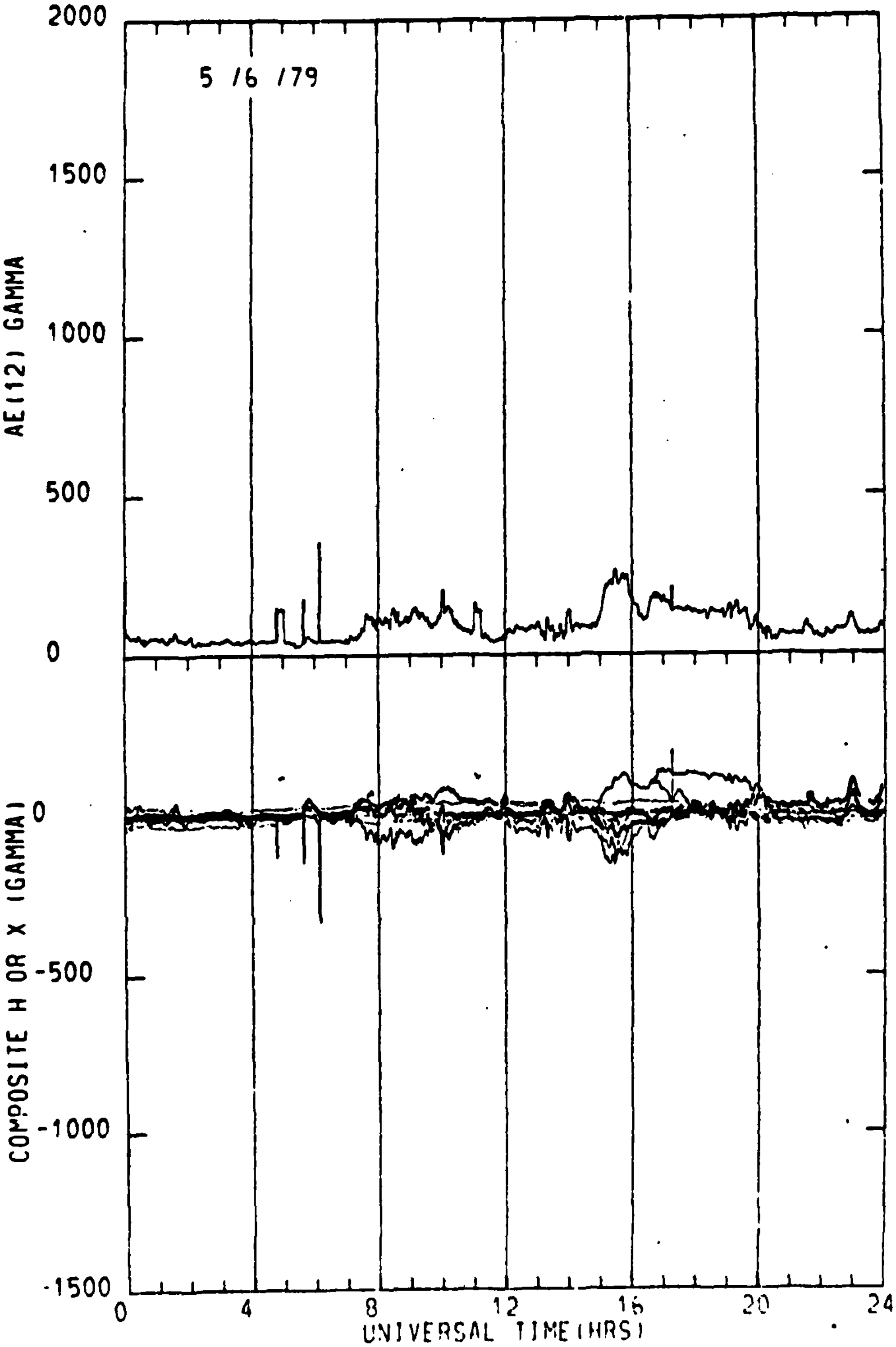


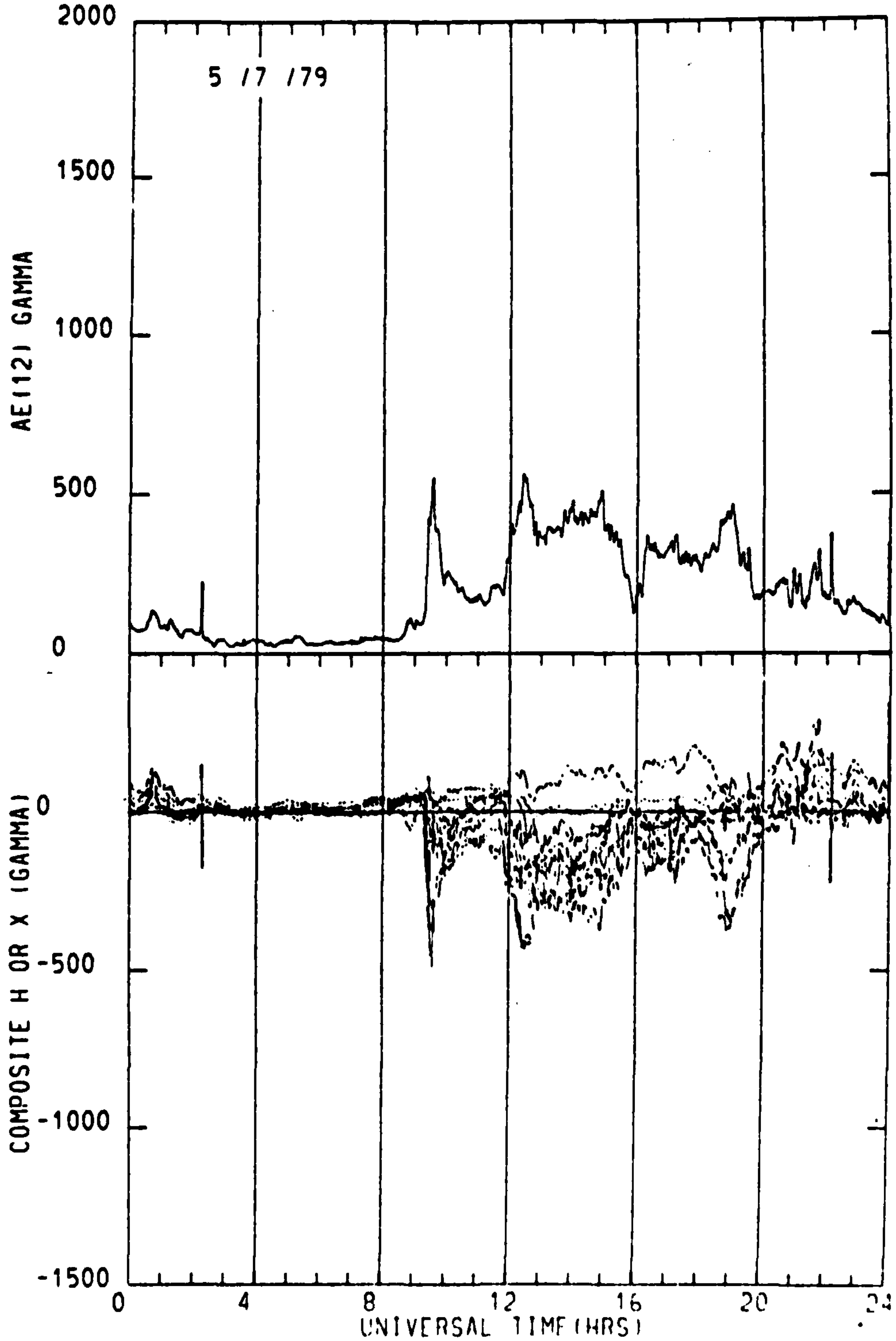
5 /3 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

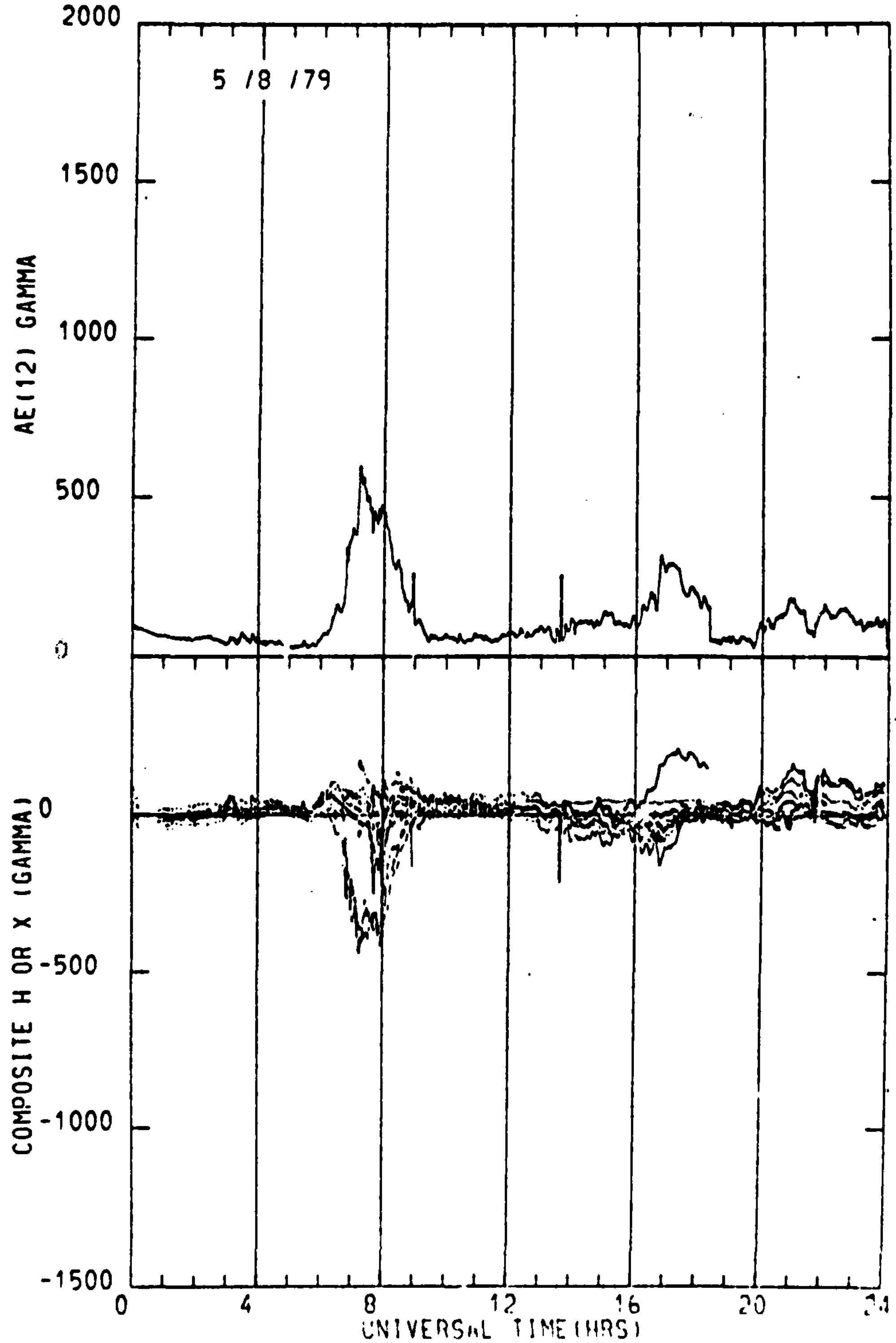


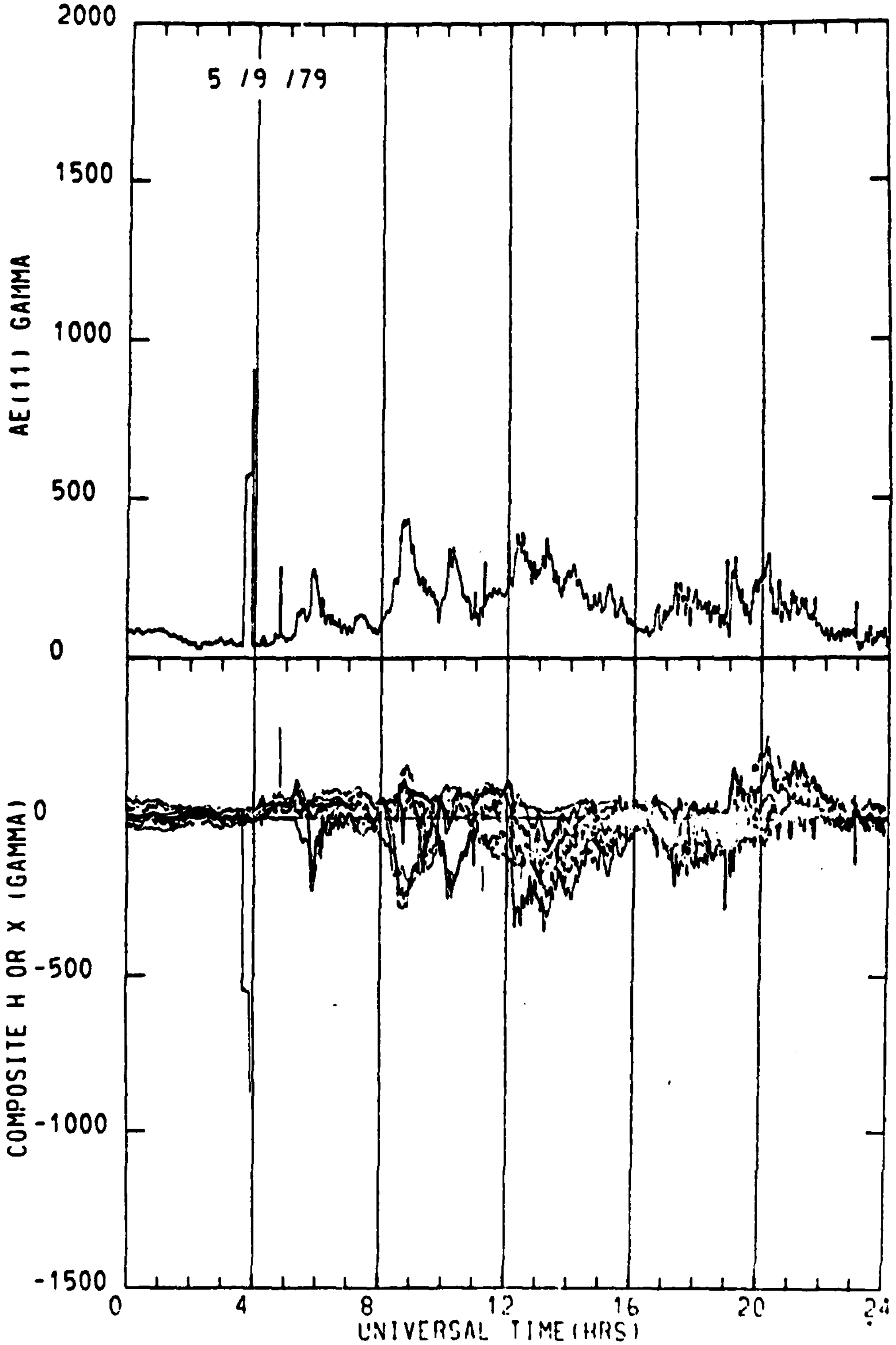
5 /4 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

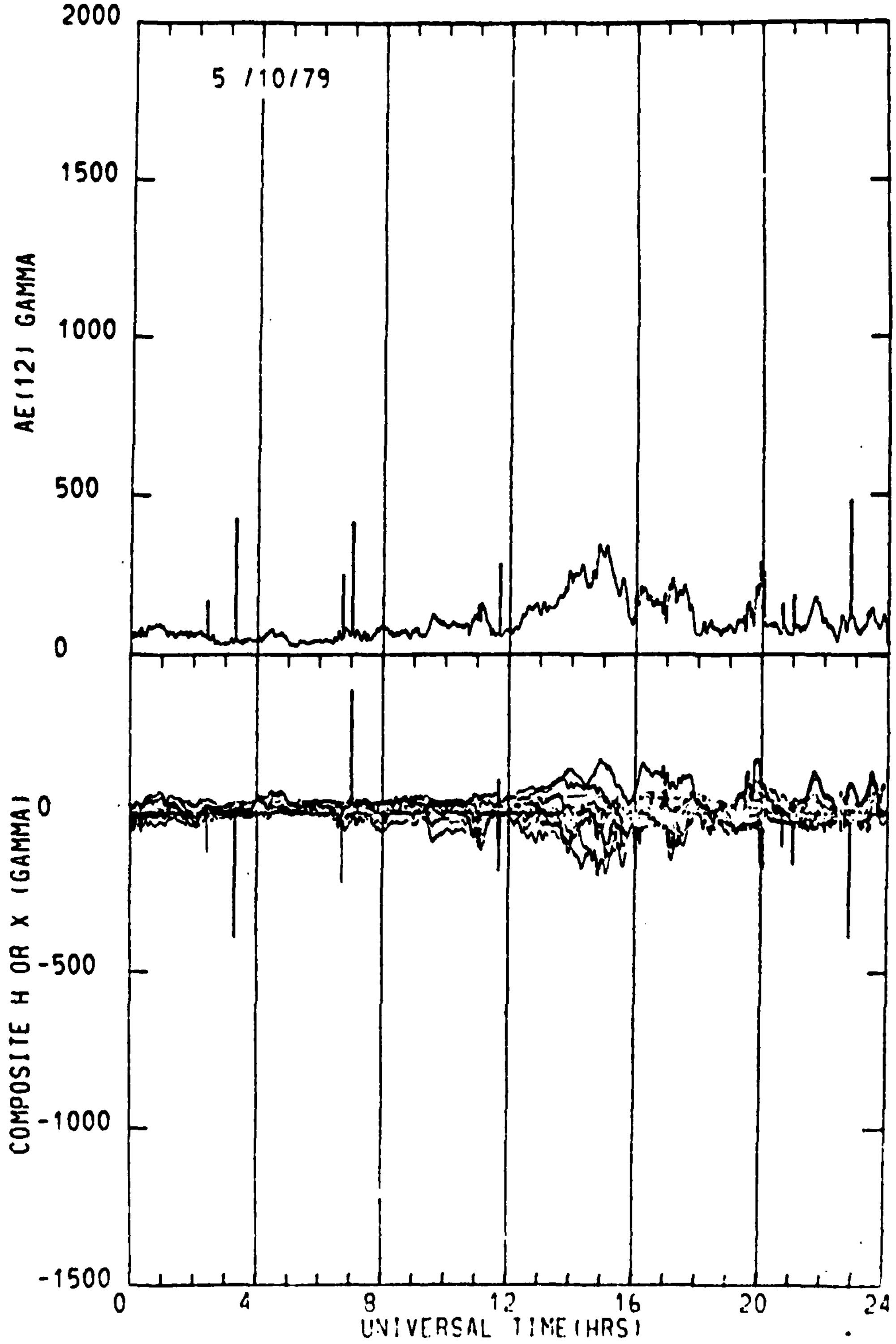

5 /5 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

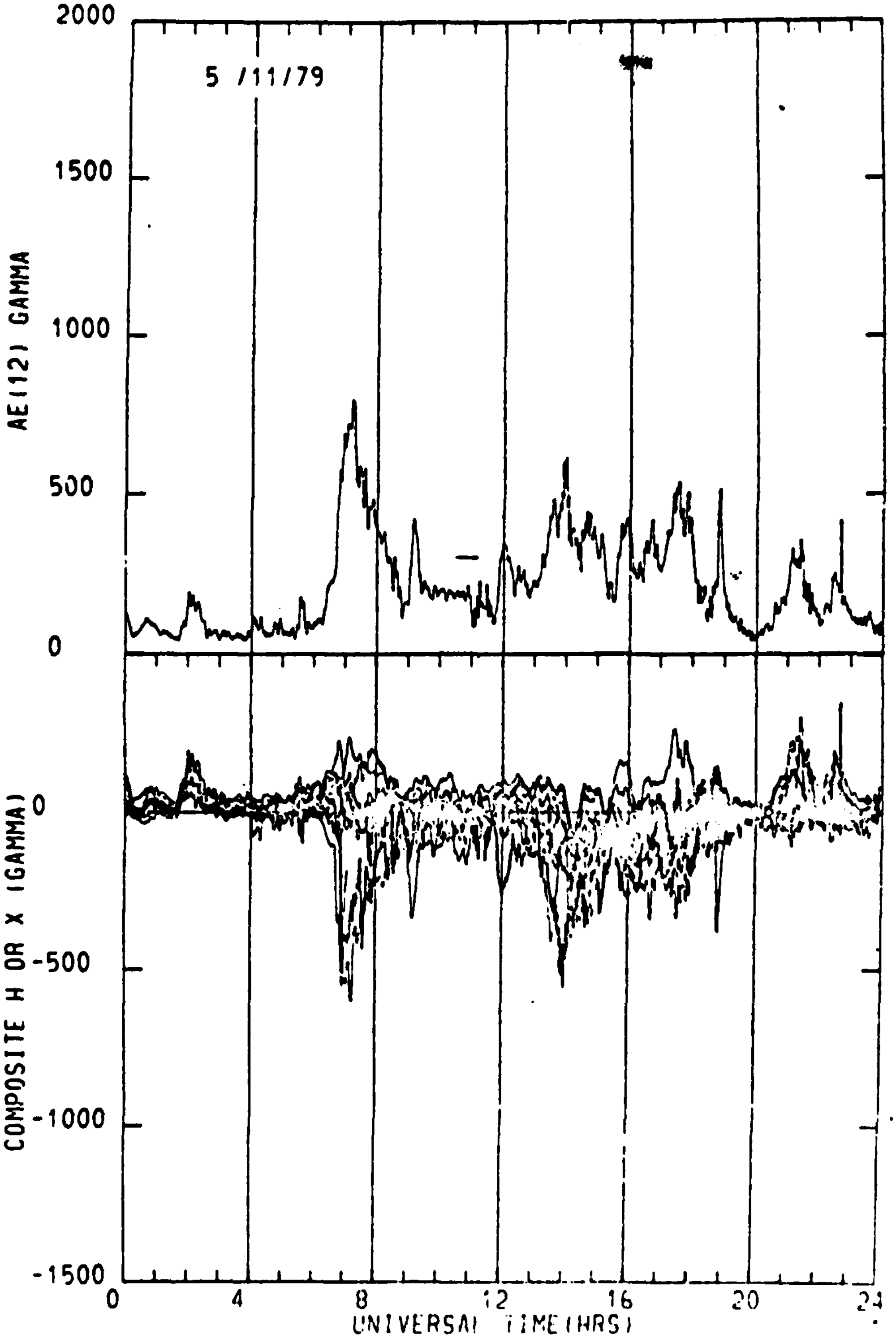

5 /6 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


5 /7 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

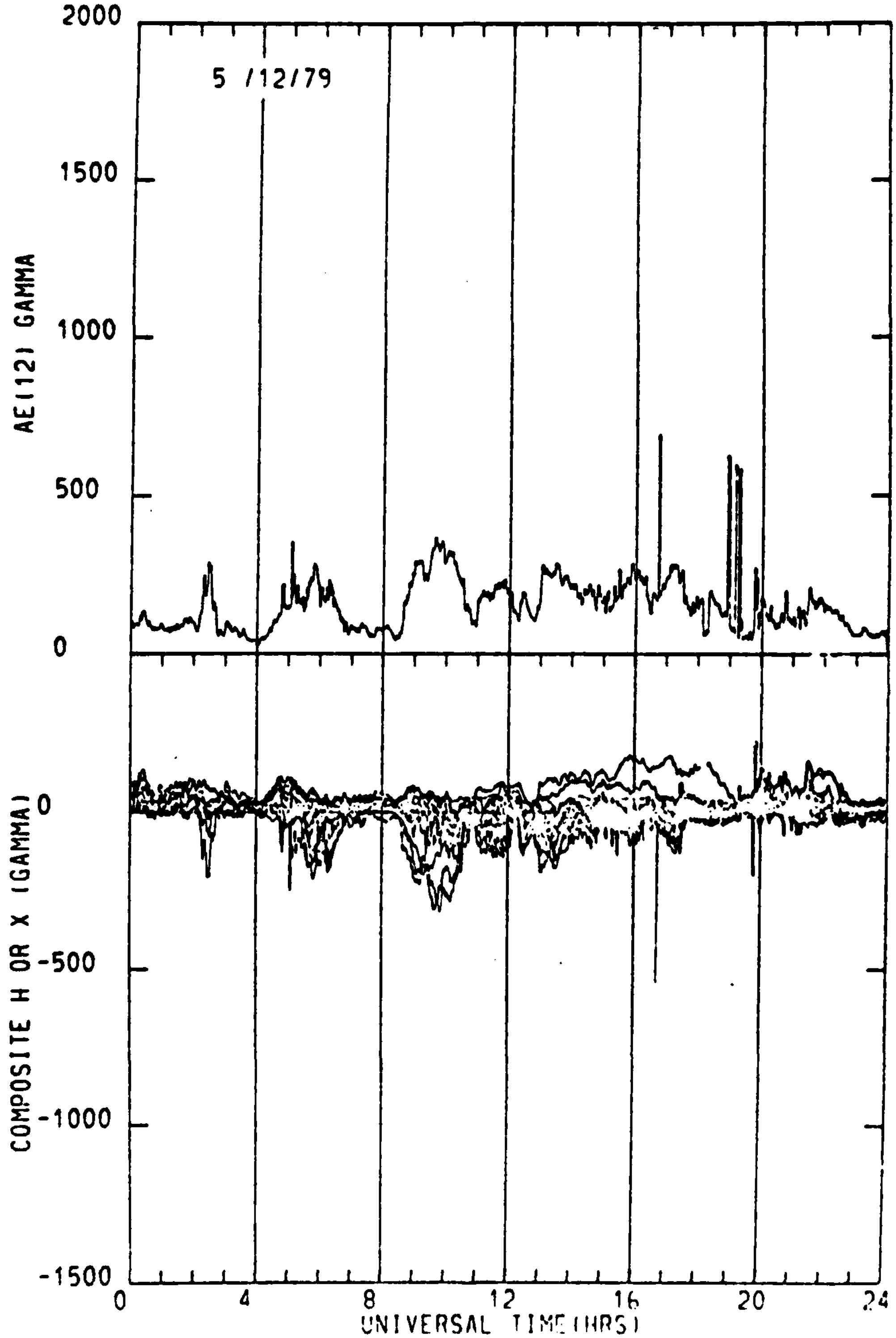

5 /8 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

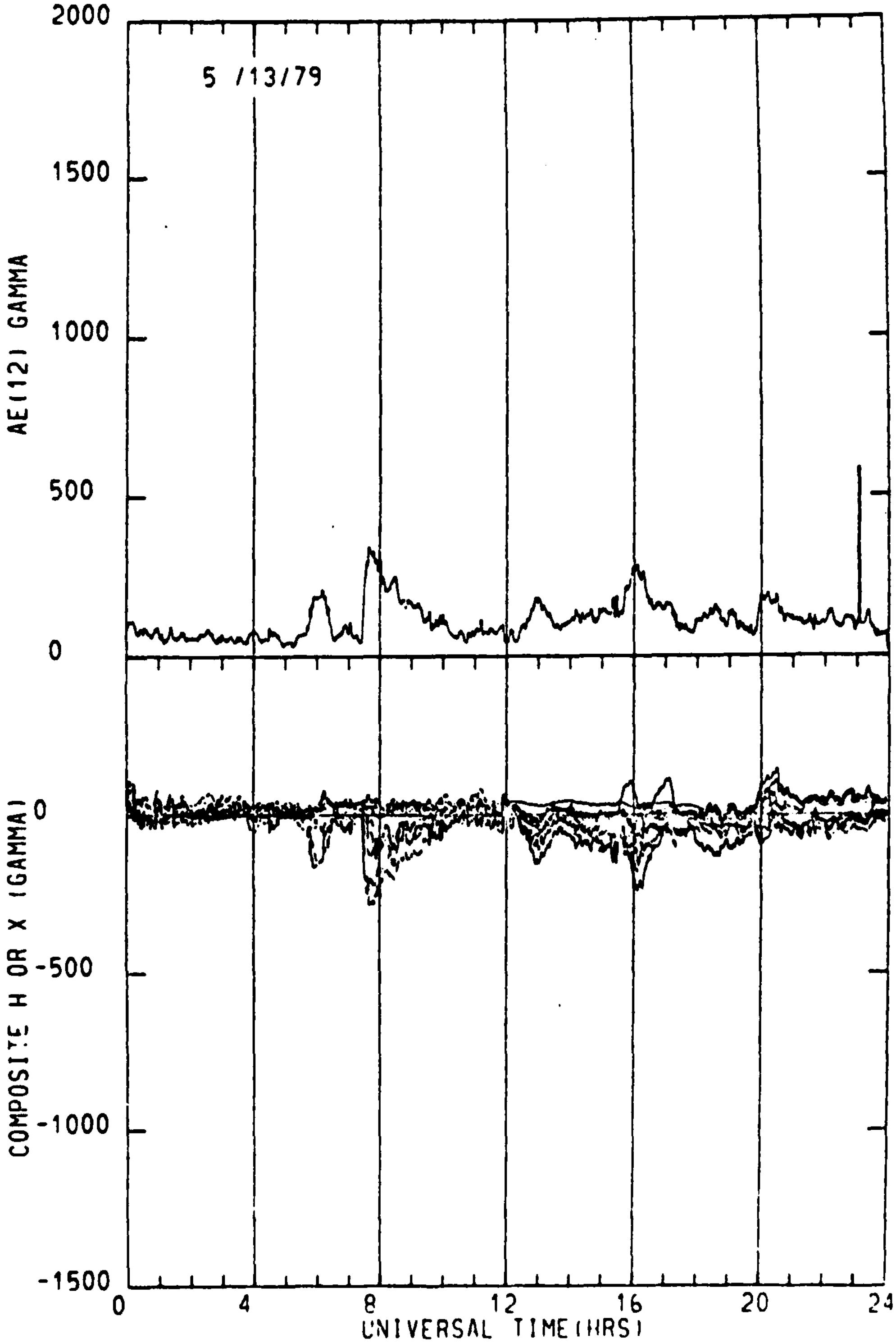

5 /9 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

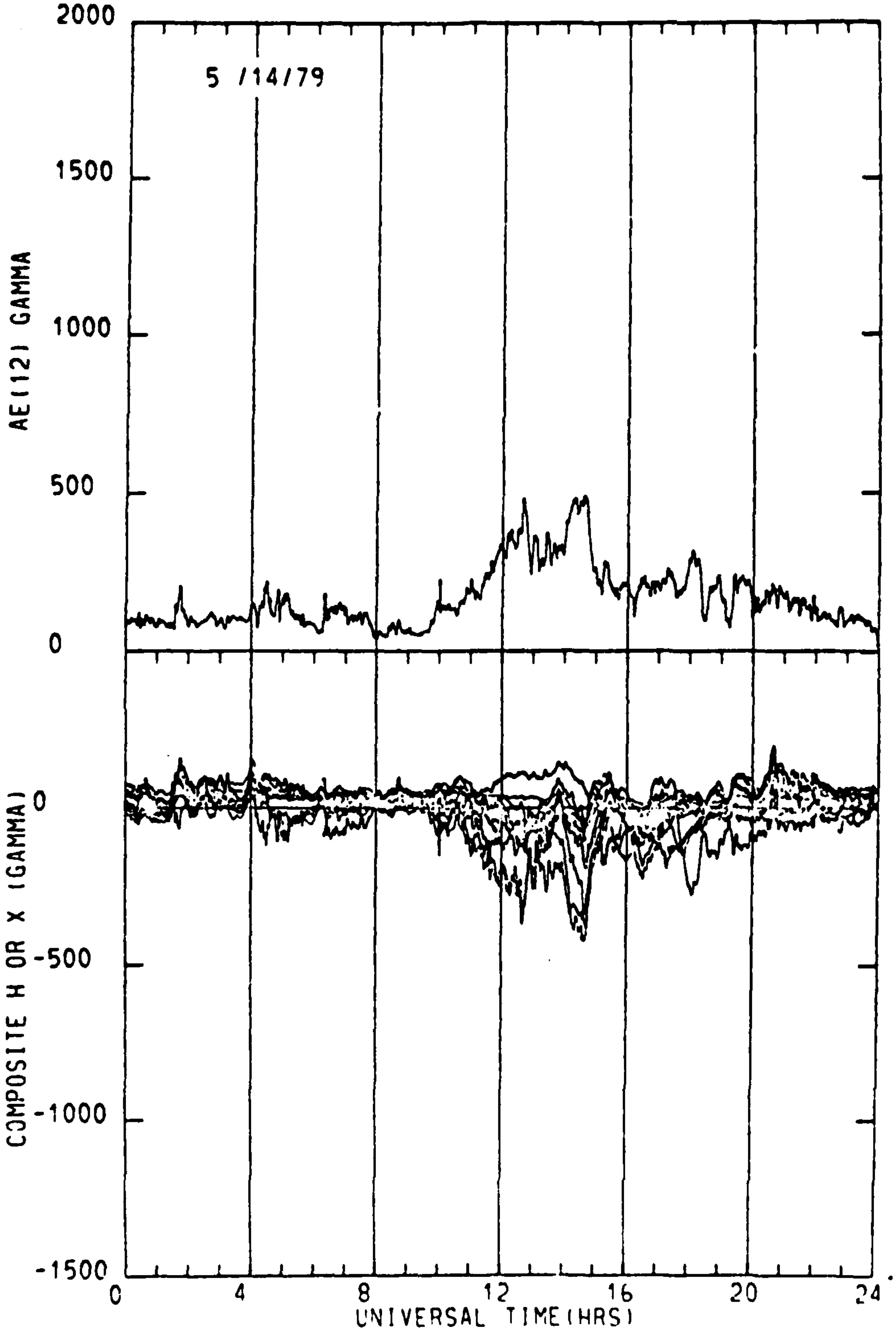

2000
5 /10/79
1500
AE(12) GAMMA
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

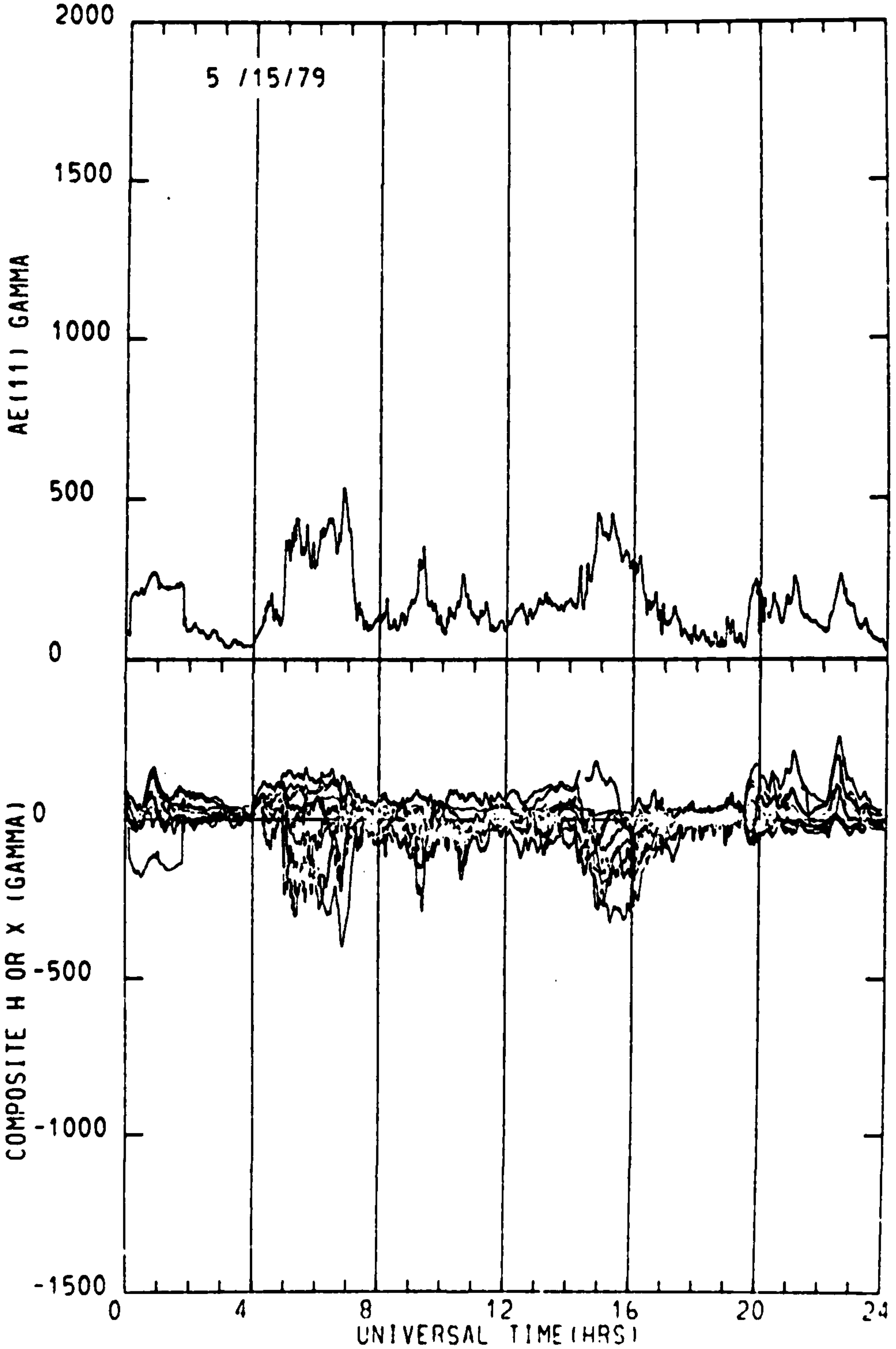


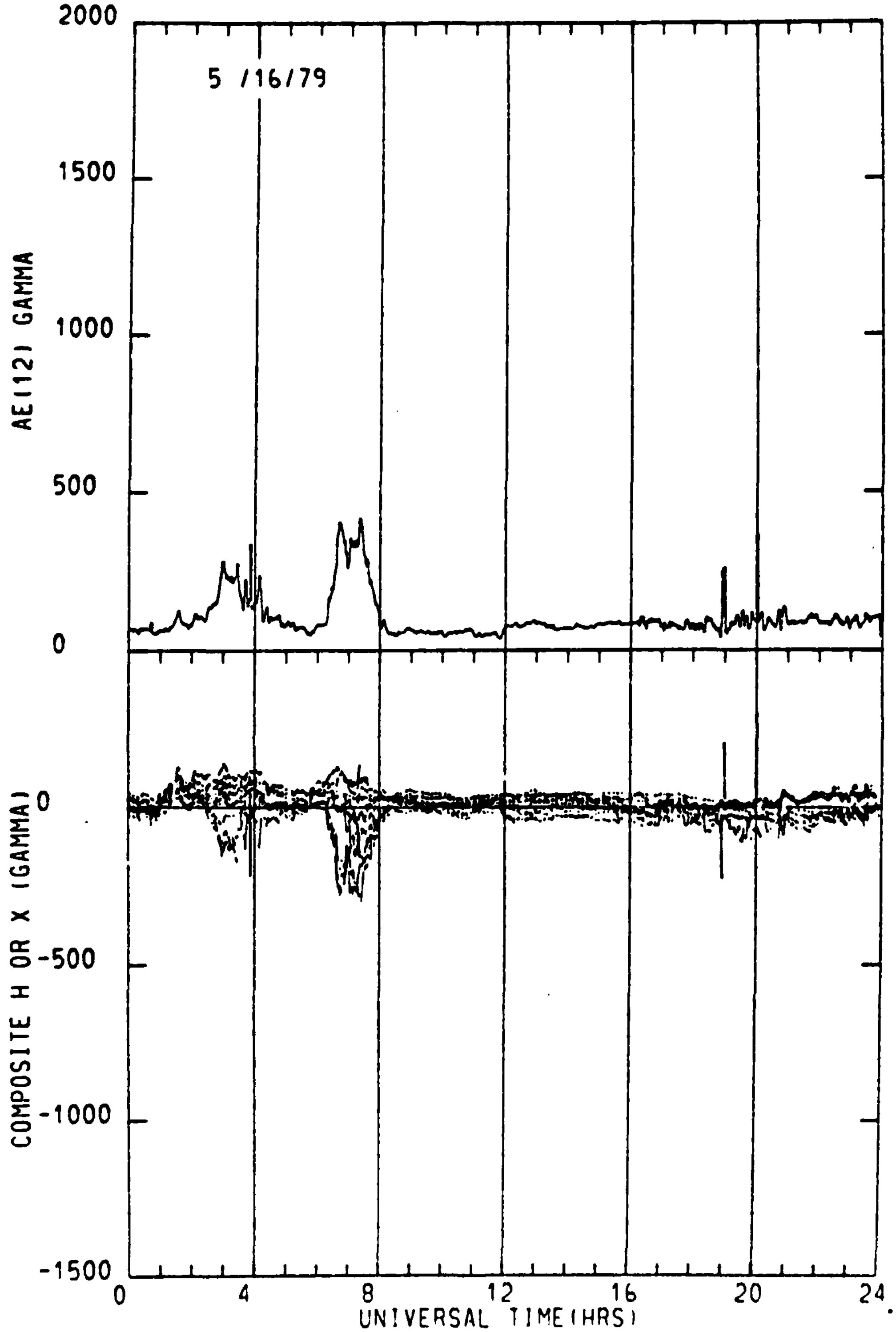
5 /11/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

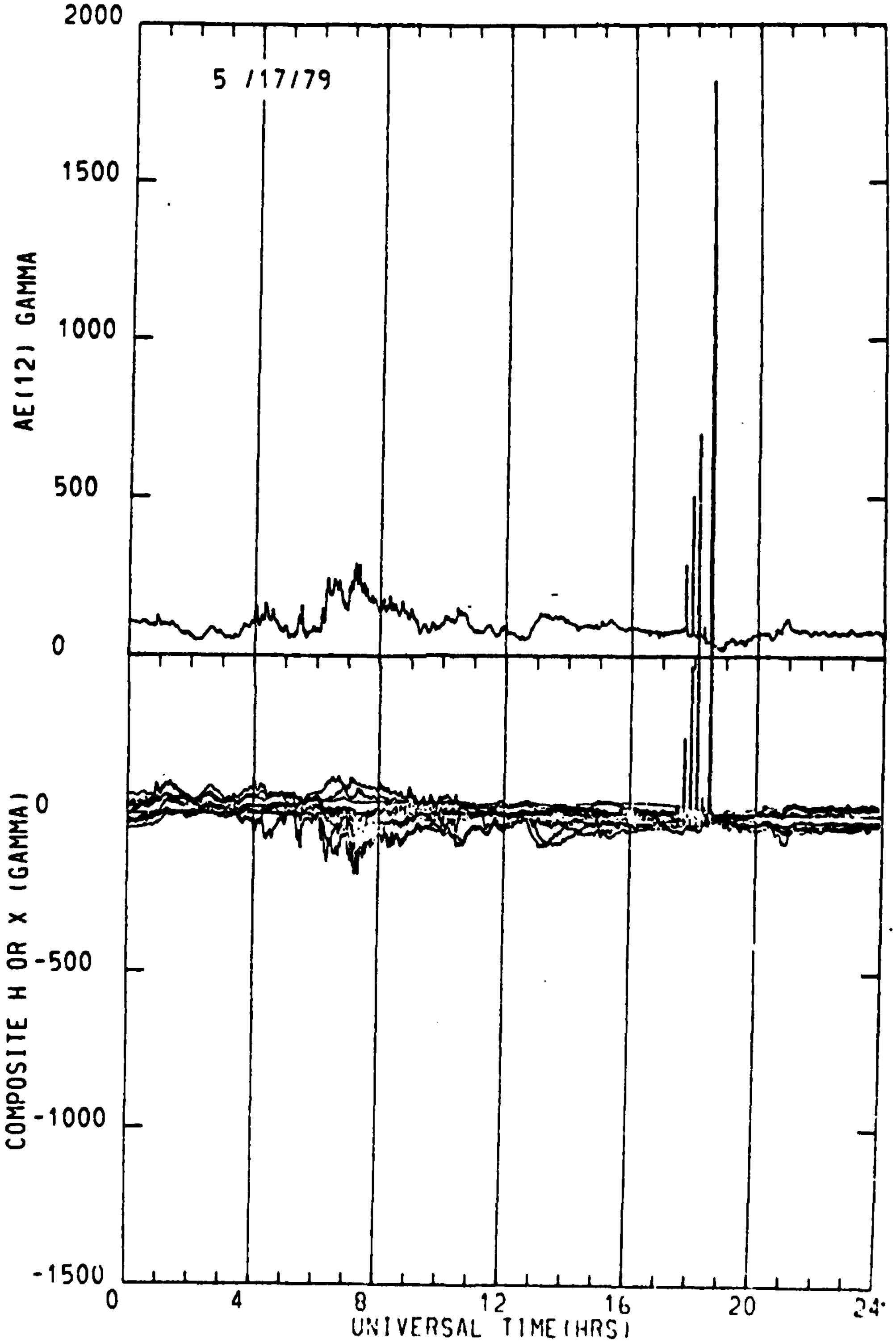

5 /12/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

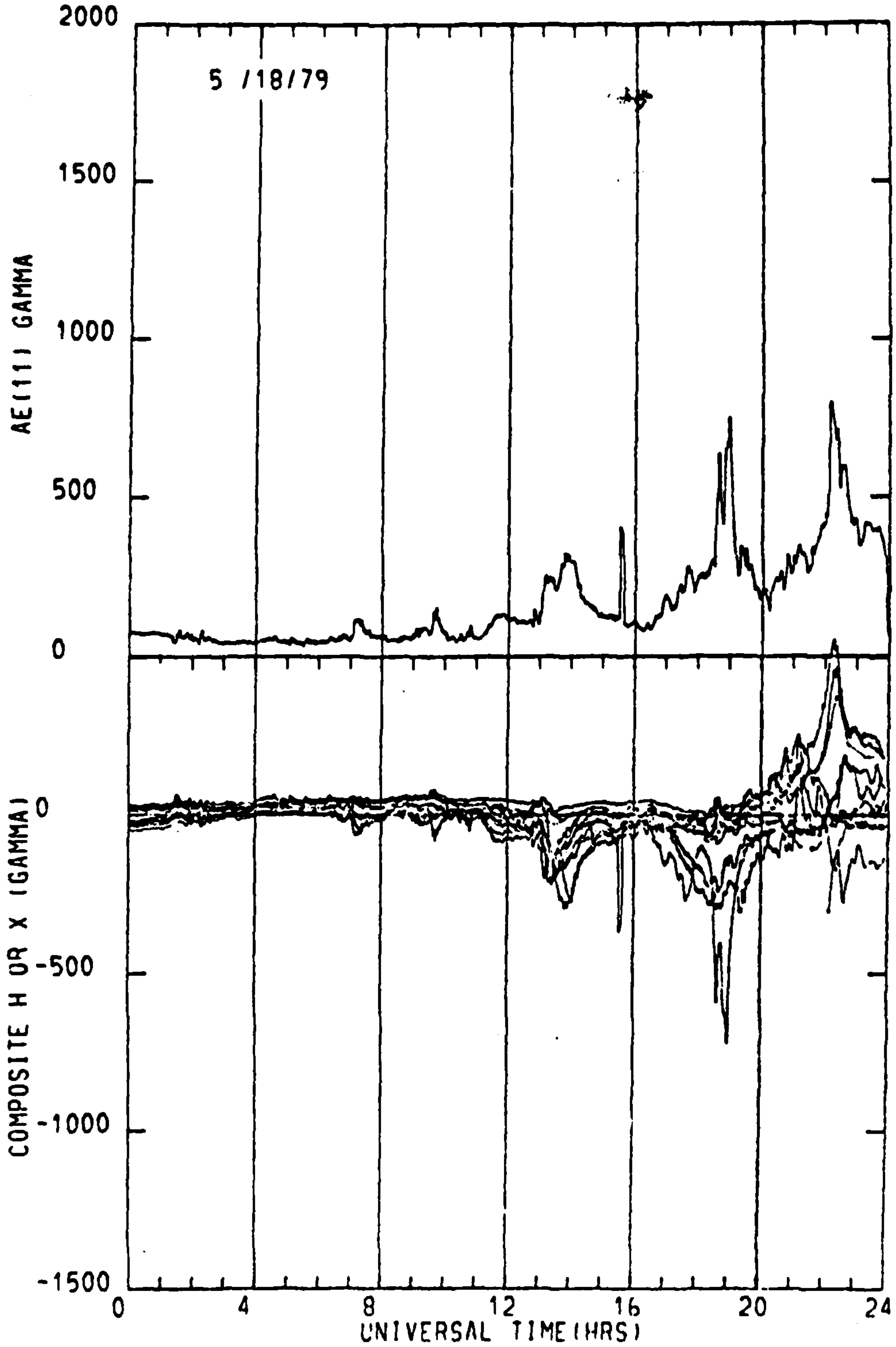

2000
1500
1000
500
0
-500
-1000
-1500
5 /13/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

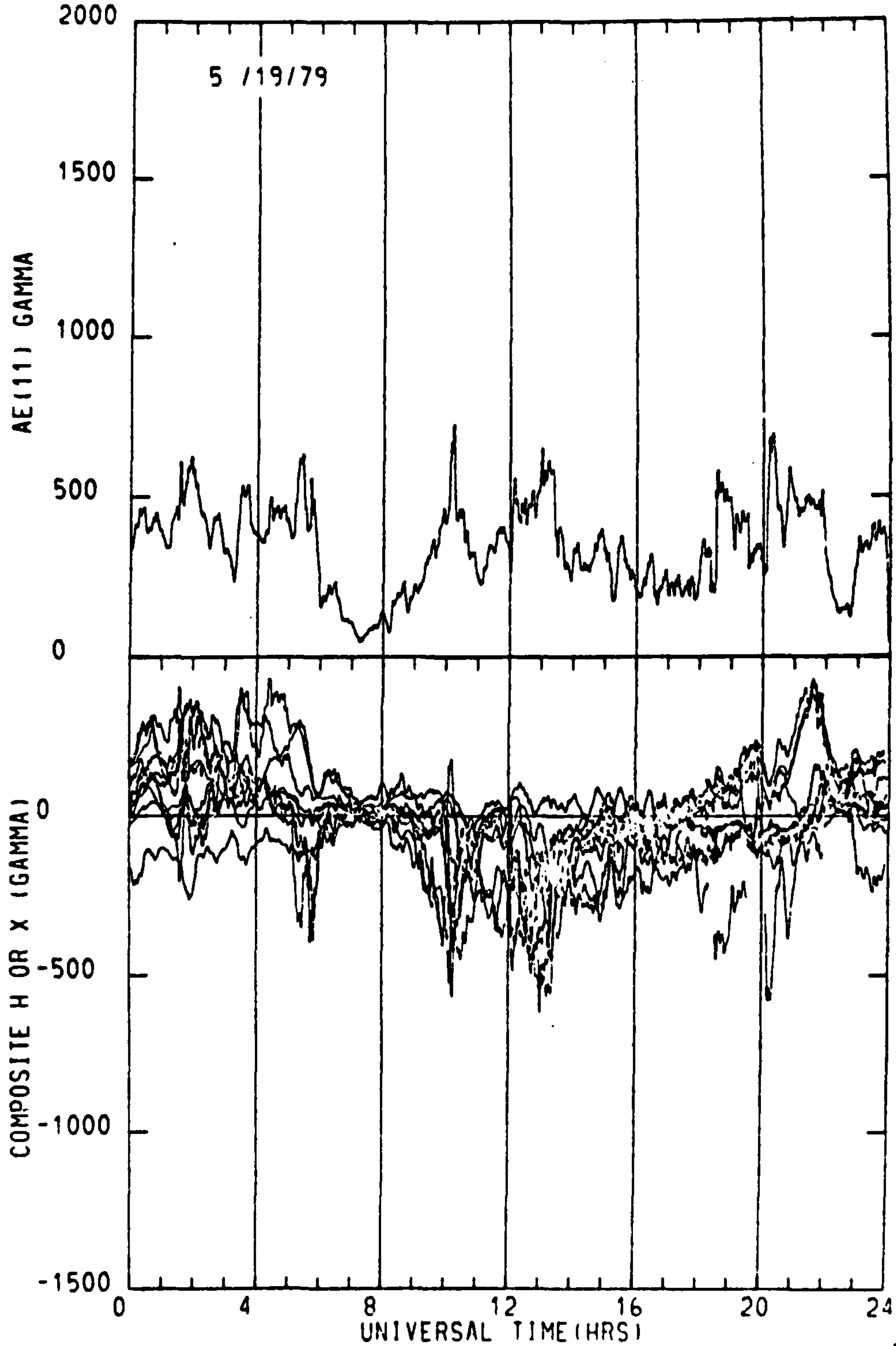

5 /14/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

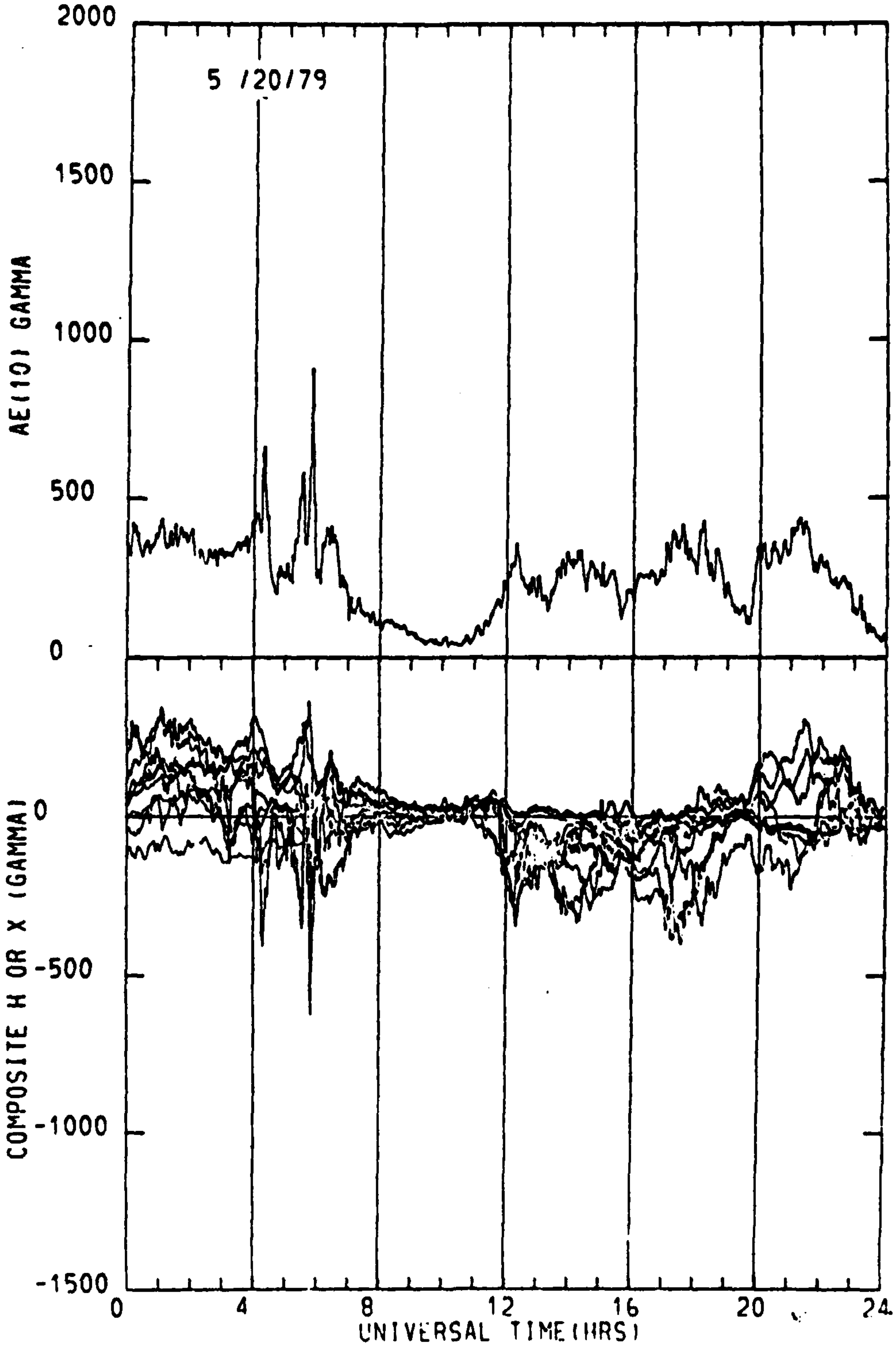

5 /15/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

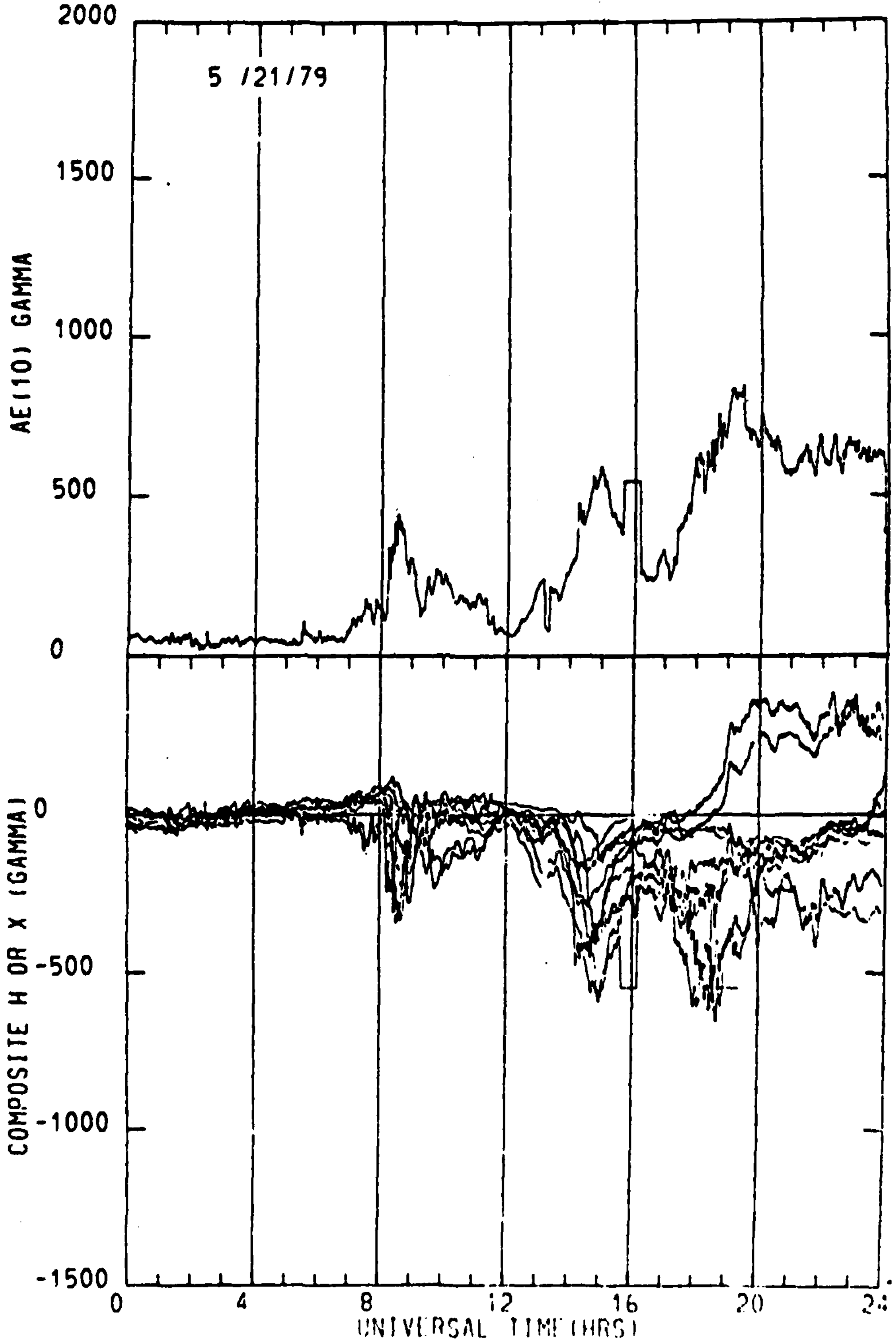

5 /16/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

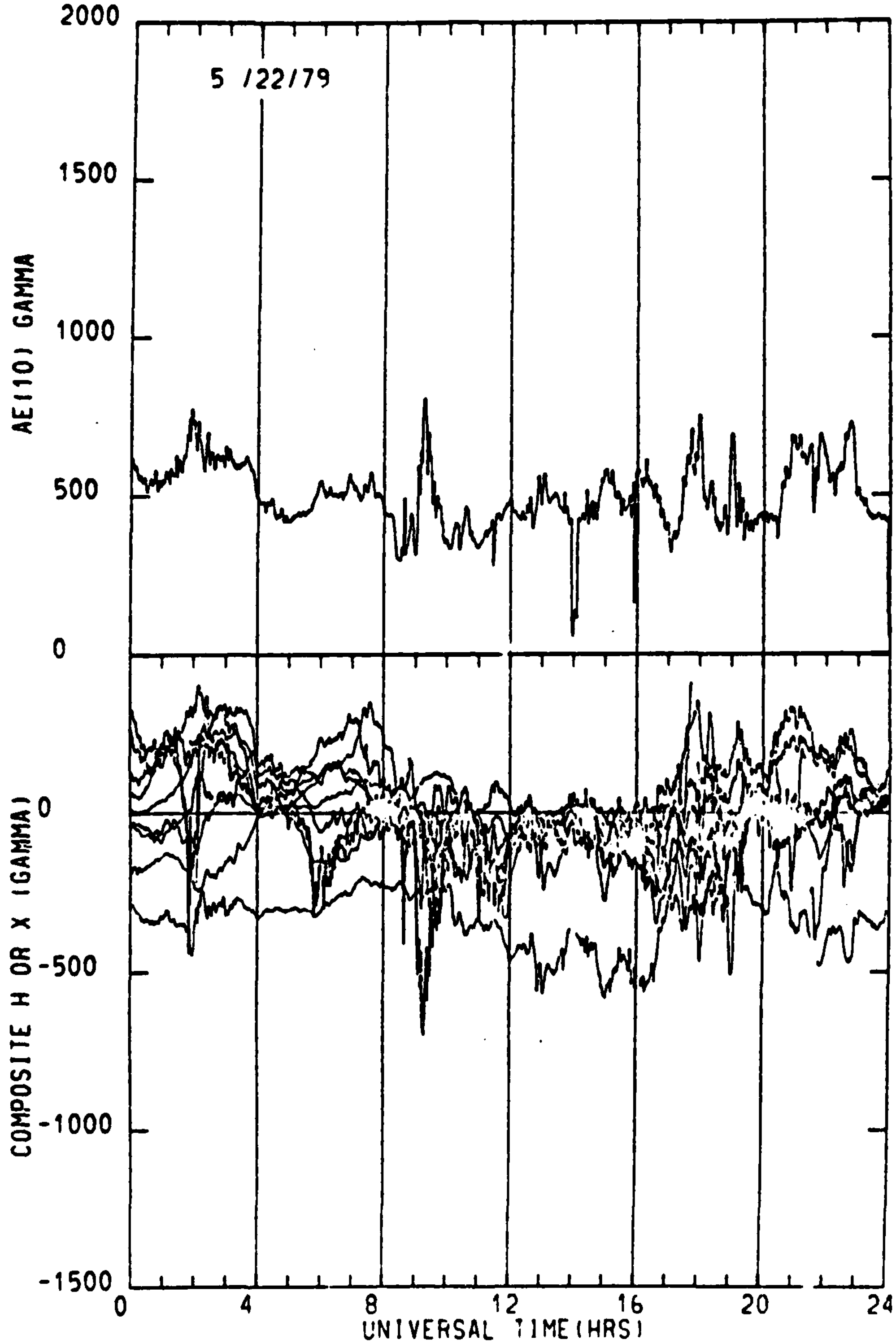

2000
5 /17/79
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


5 /18/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

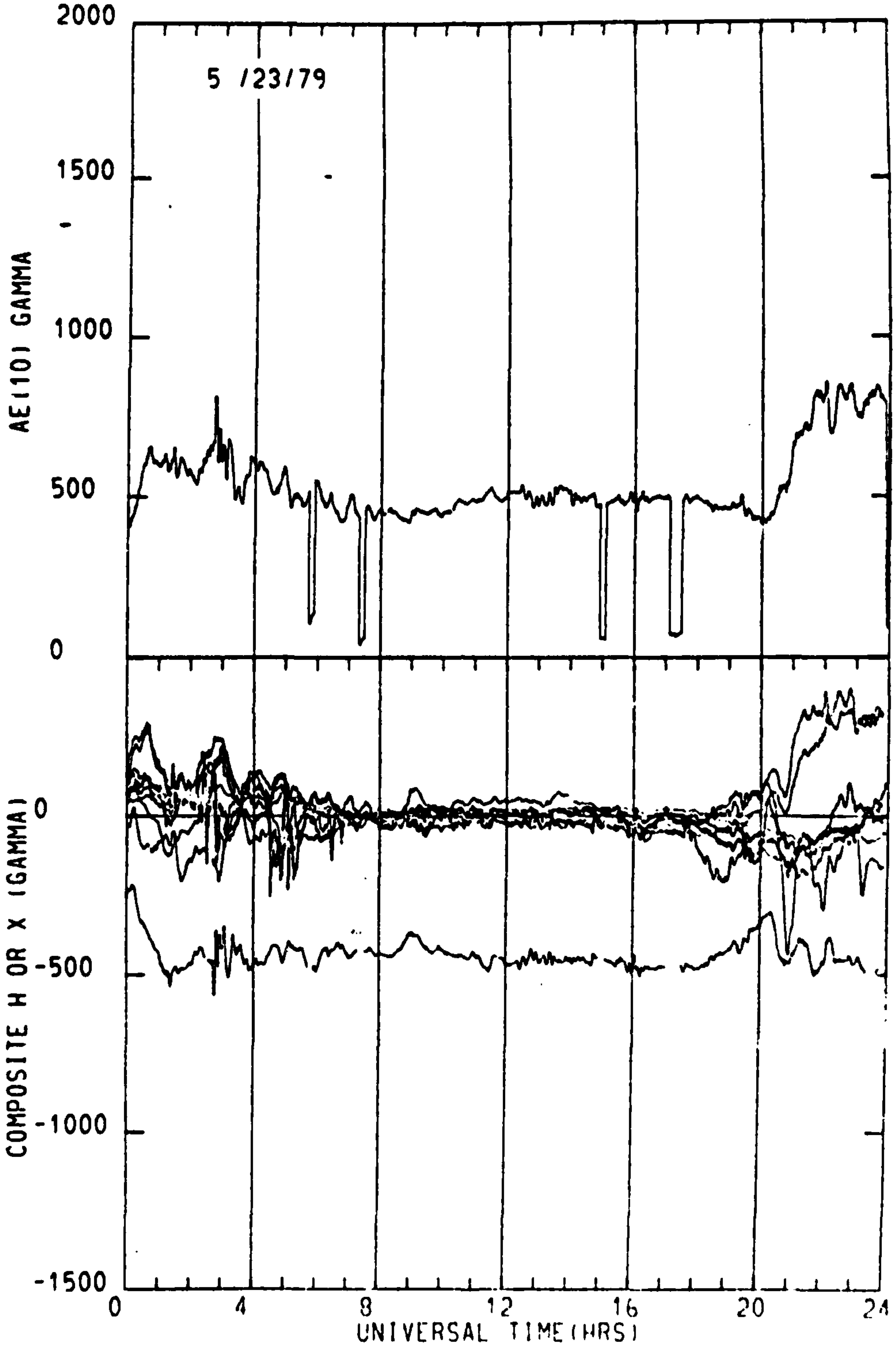

5 /19/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


5 /20/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

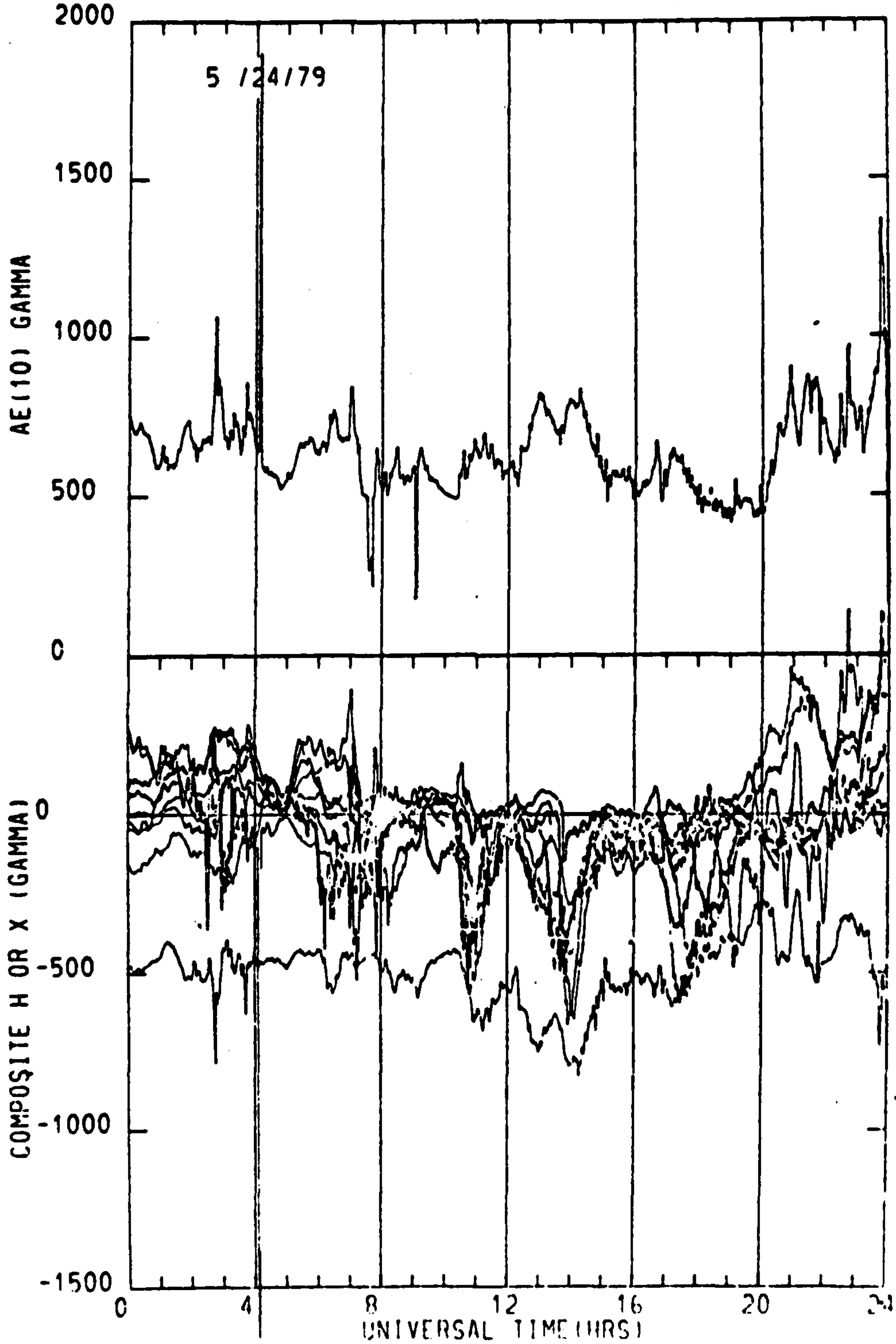

5 /21/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

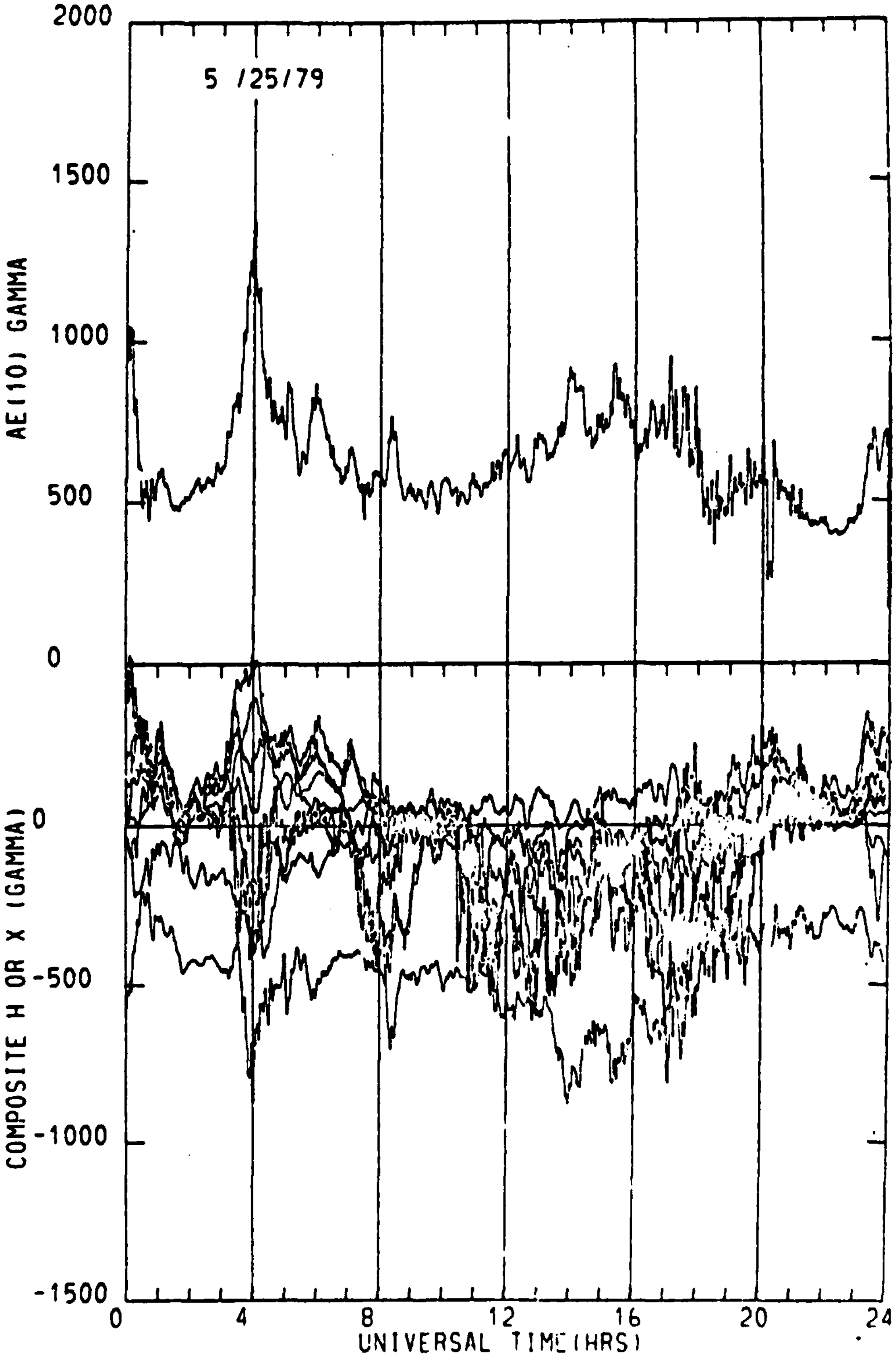


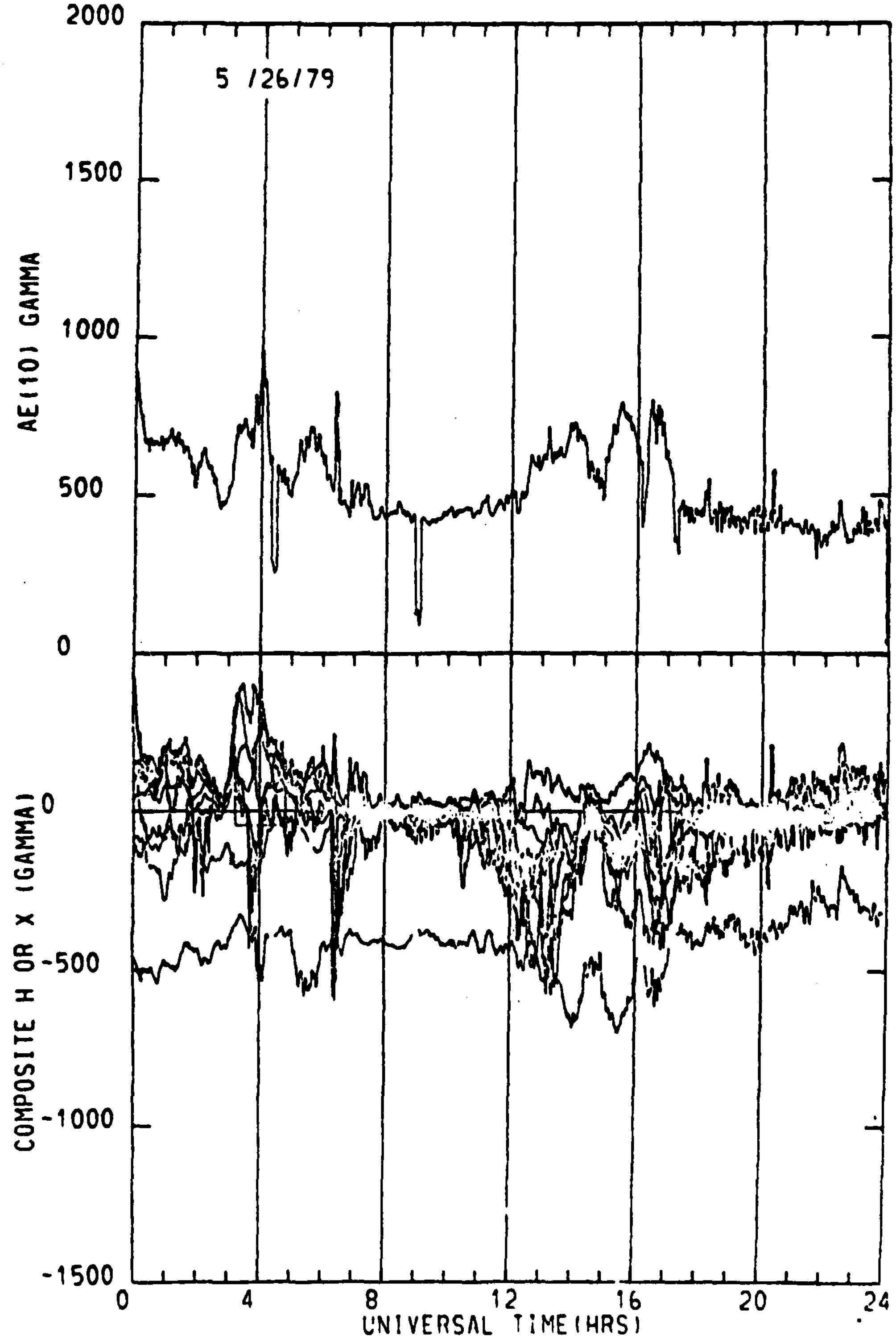
5 /22/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

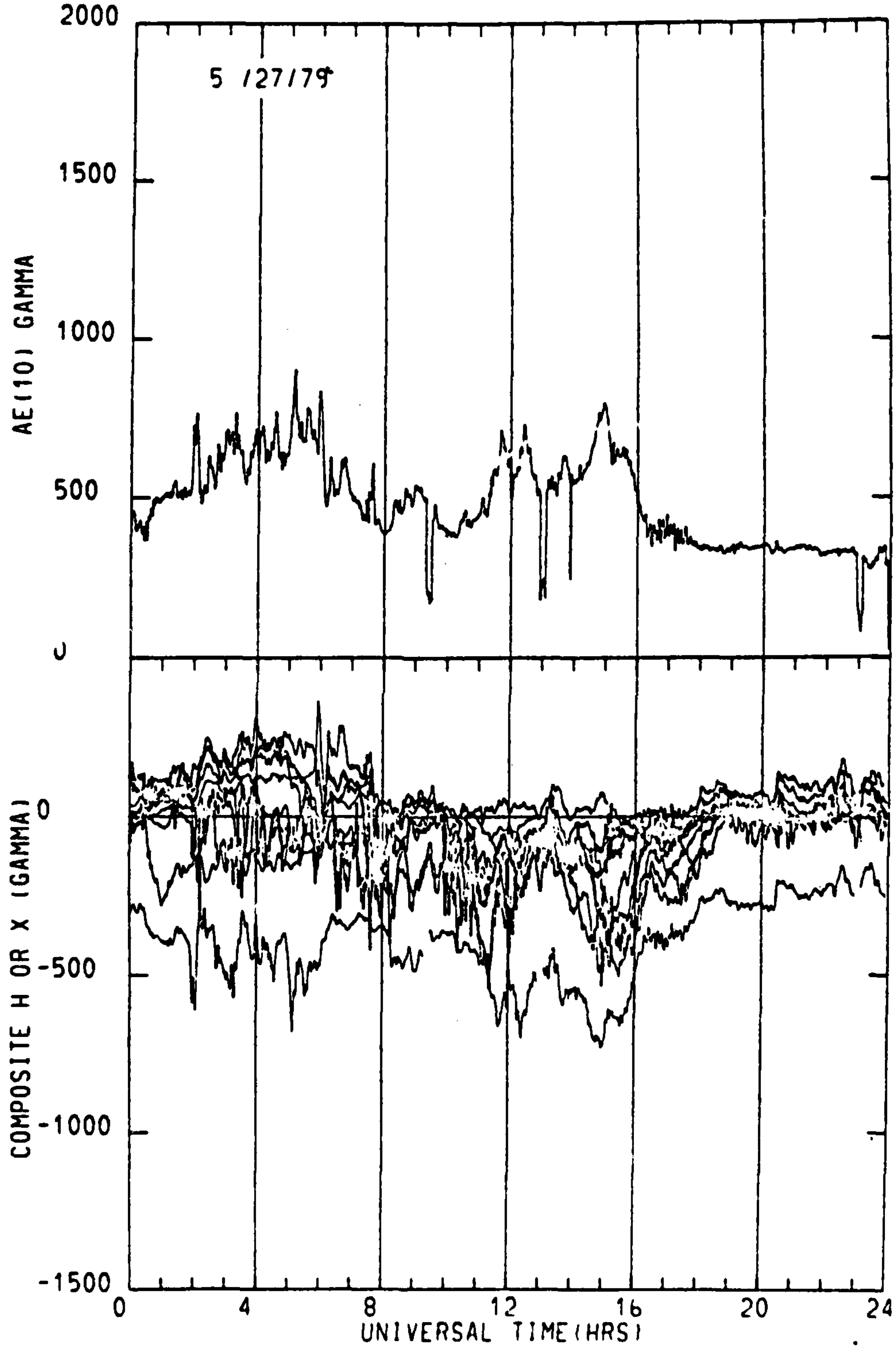


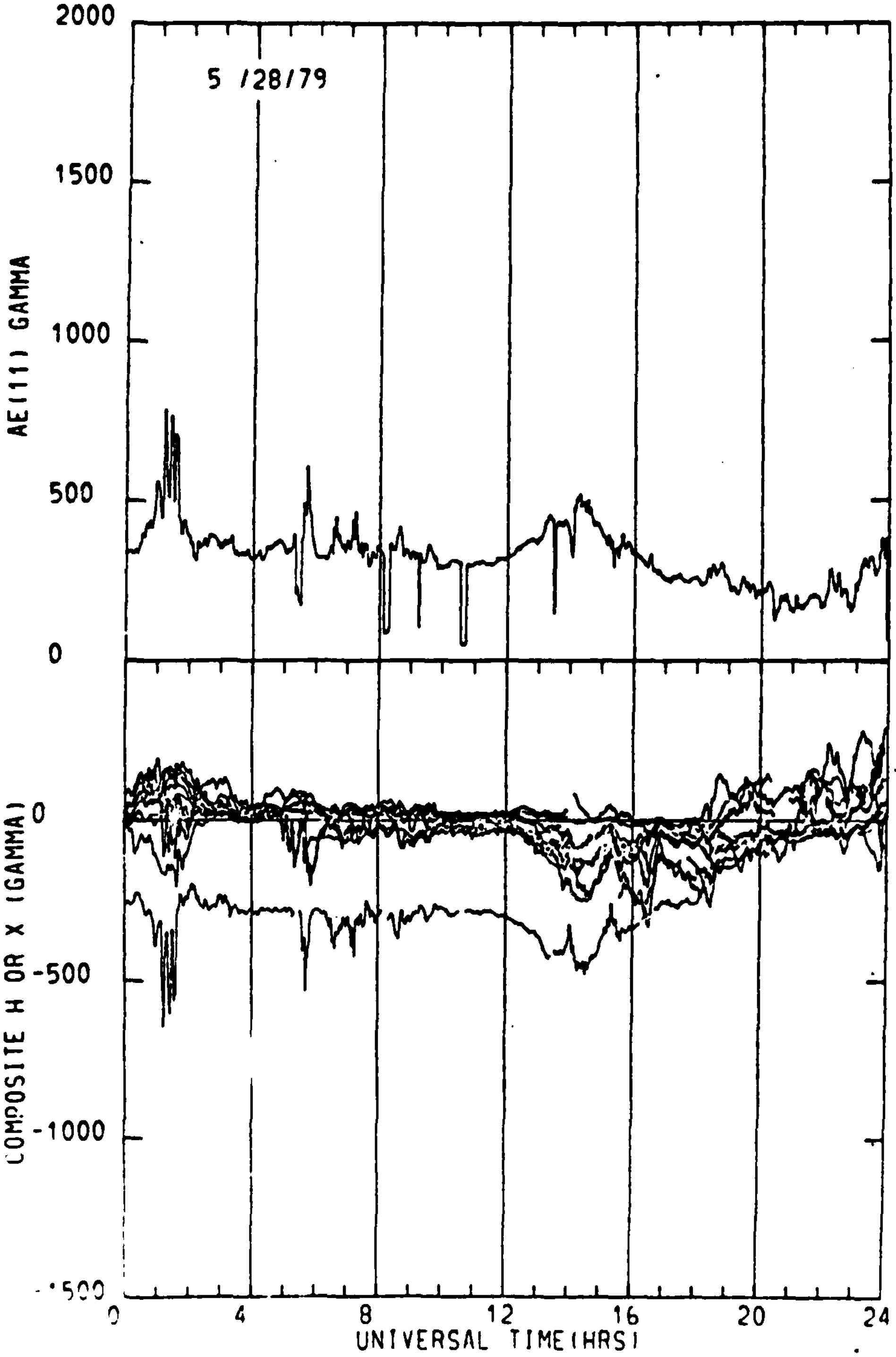
5 /23/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

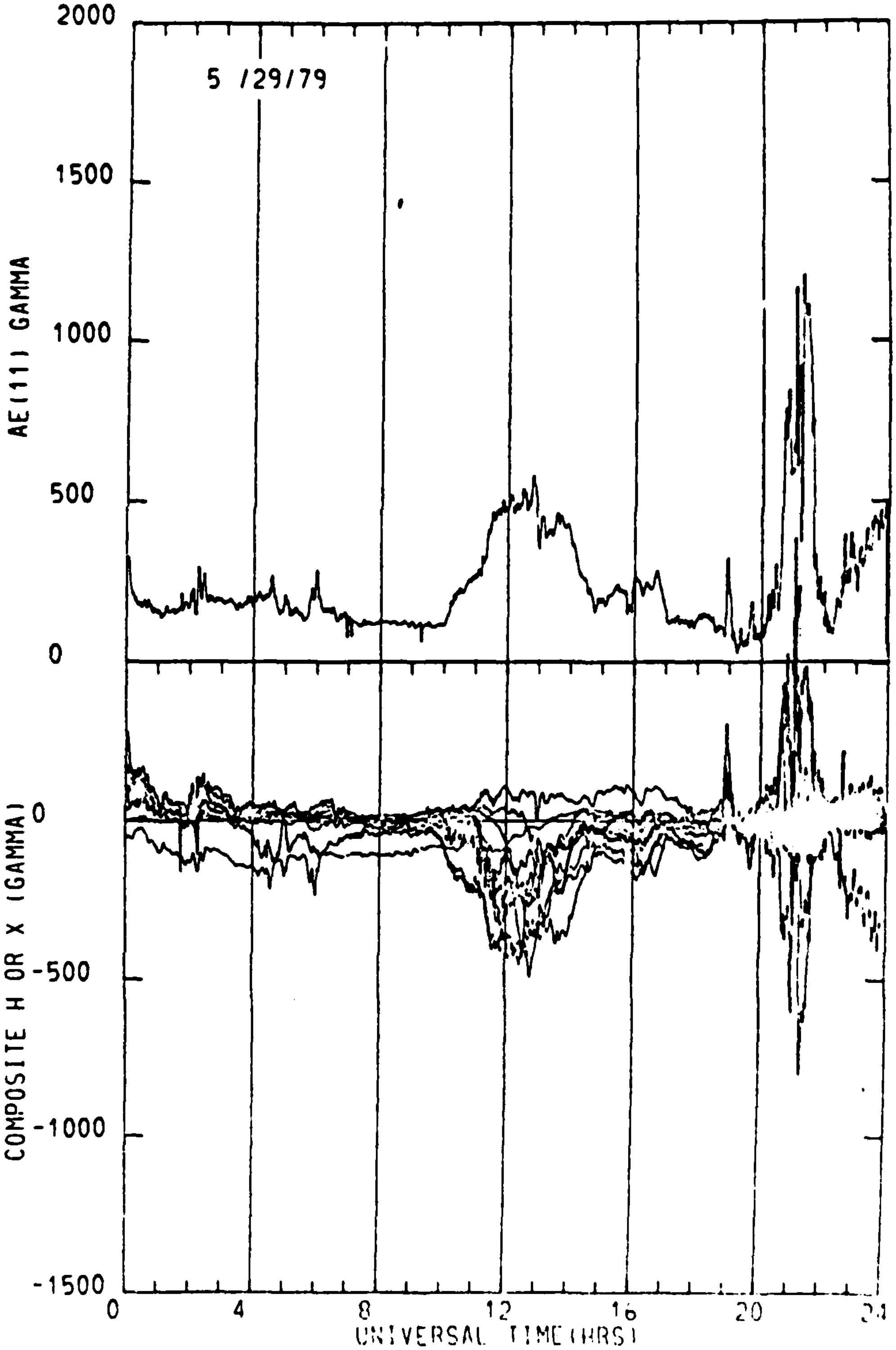

5 /24/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

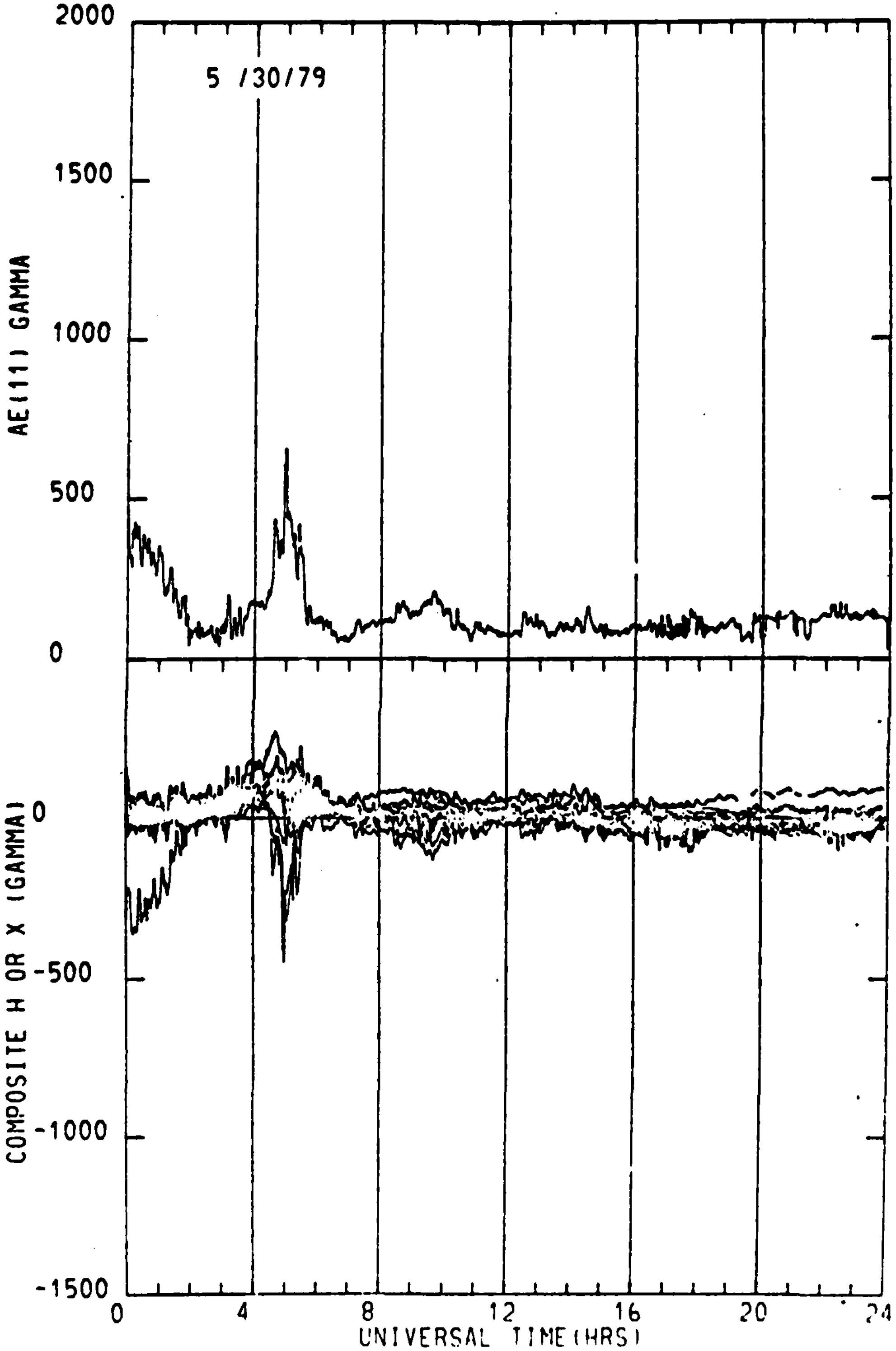

5 /25/79
AE(10) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

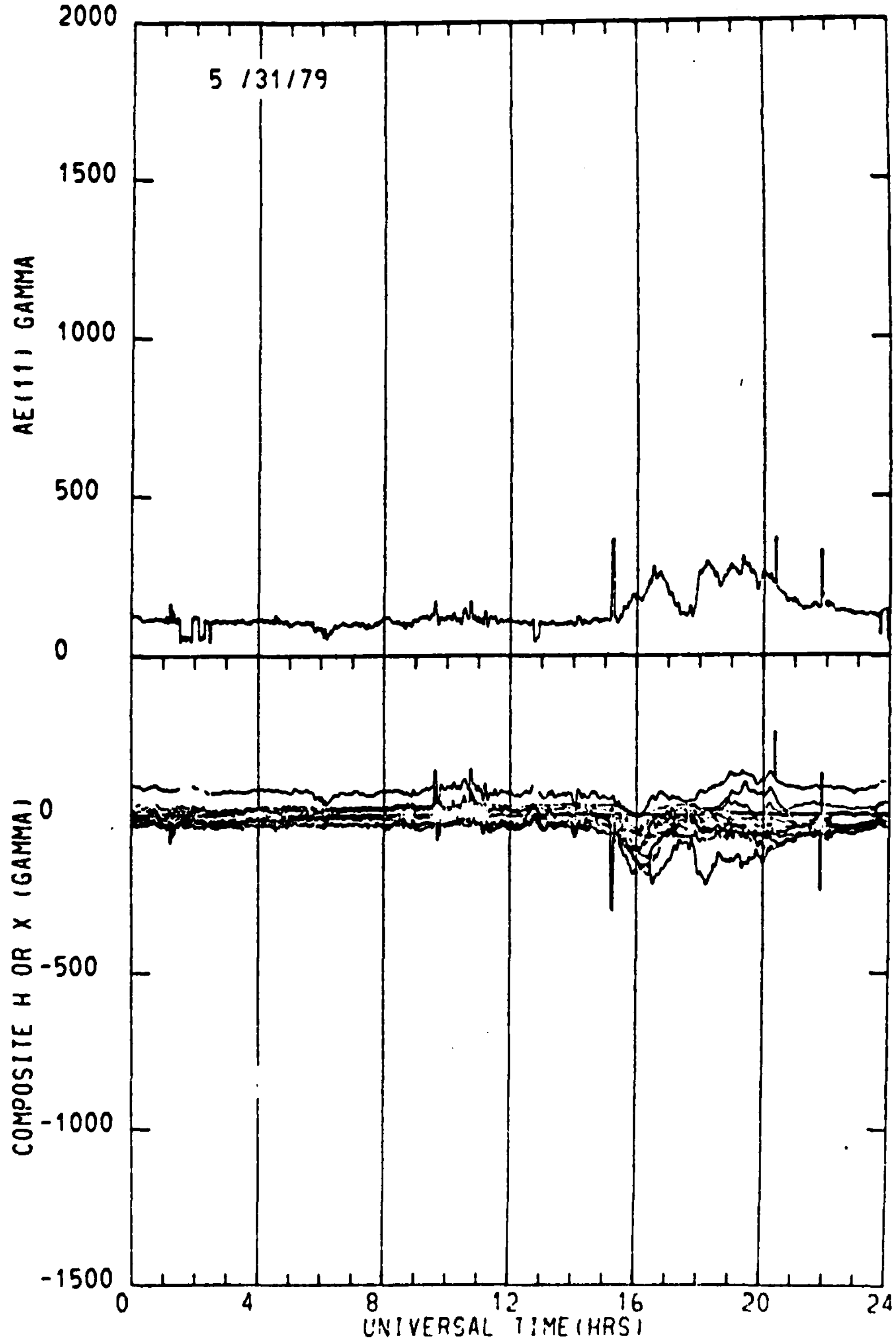

5 /26/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


5 /27/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

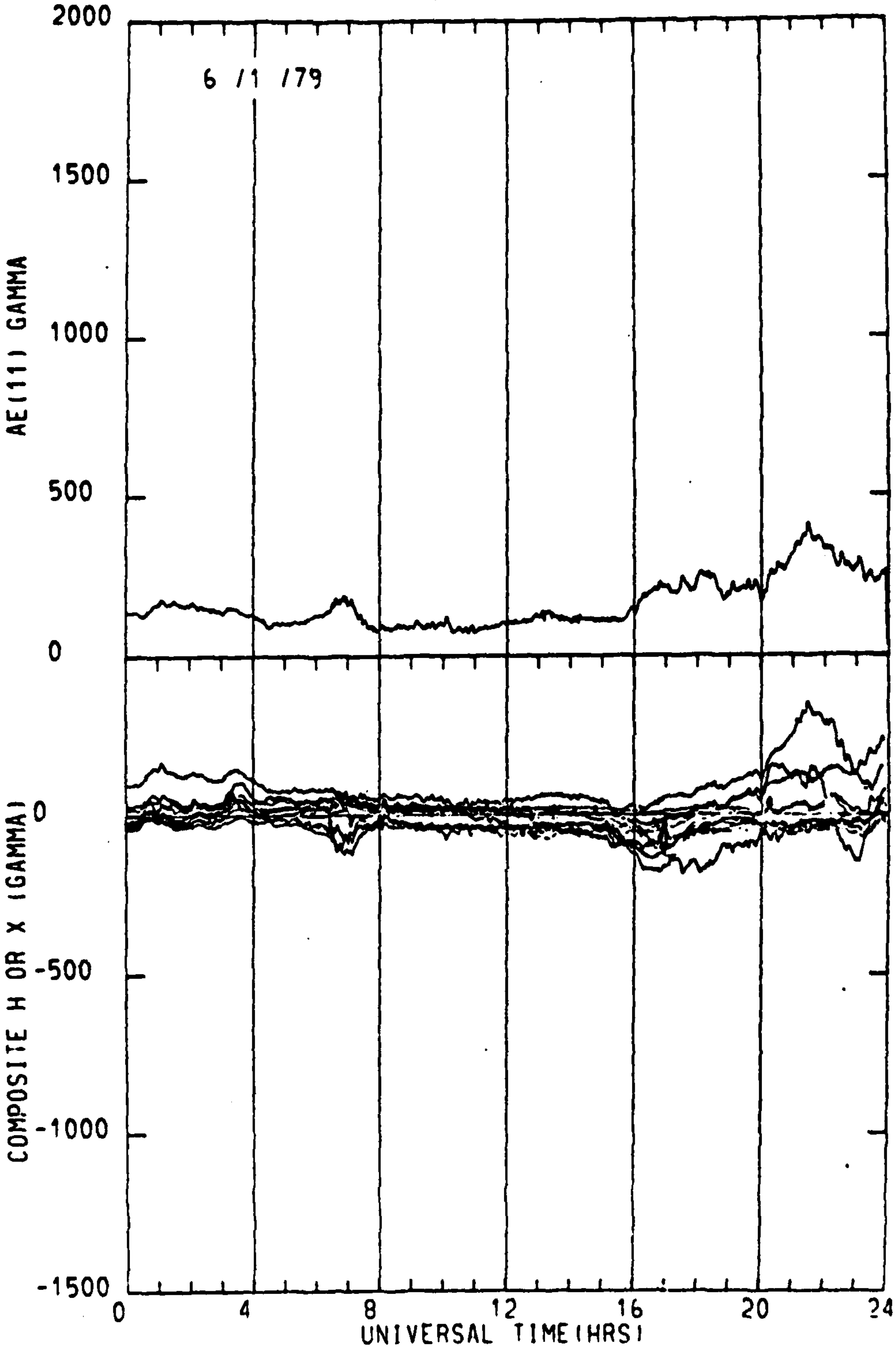

5 /28/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

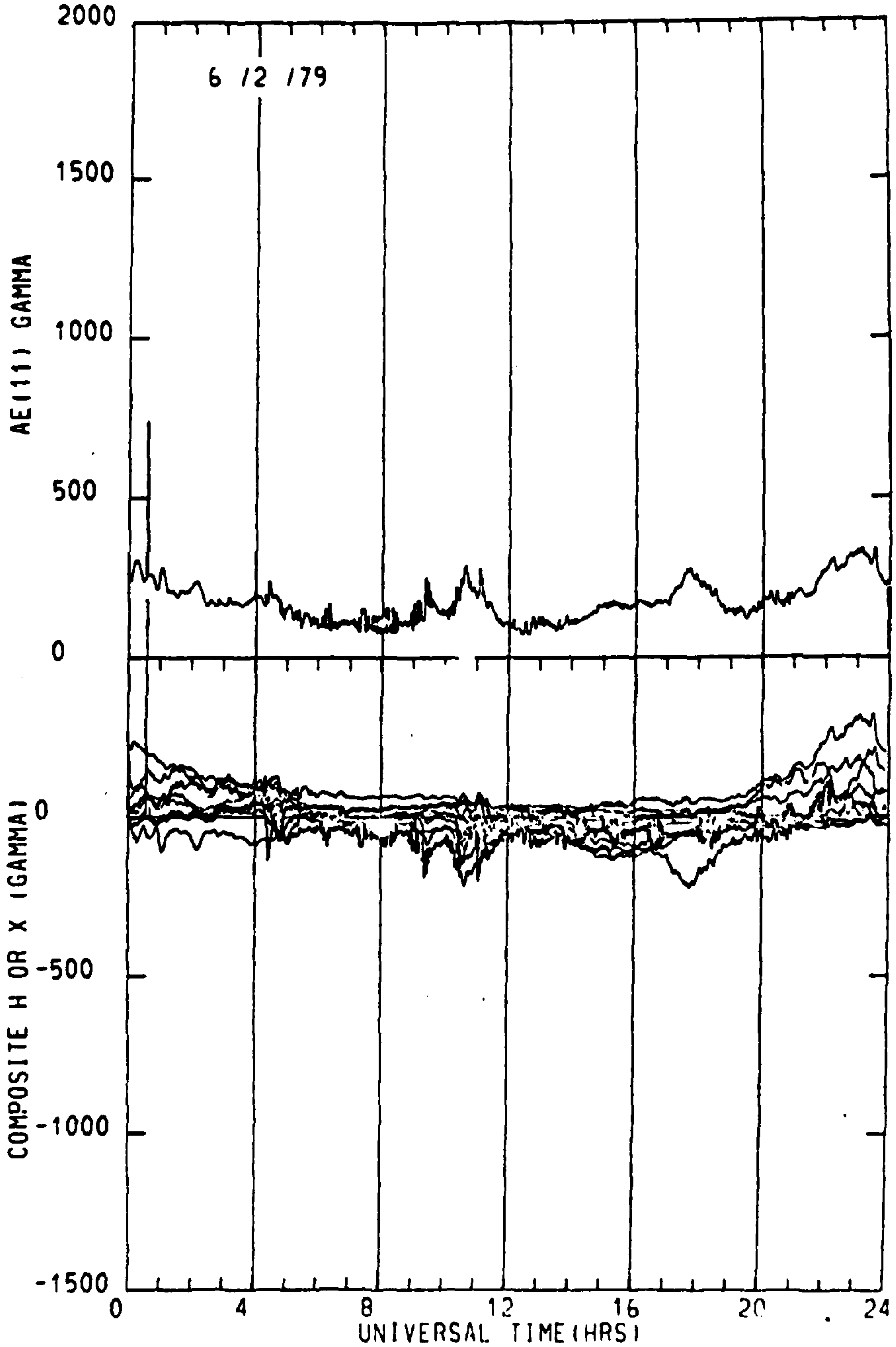

5 /29/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)


2000
5 /30/79
1500
1000
AE(11) GAMMA
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

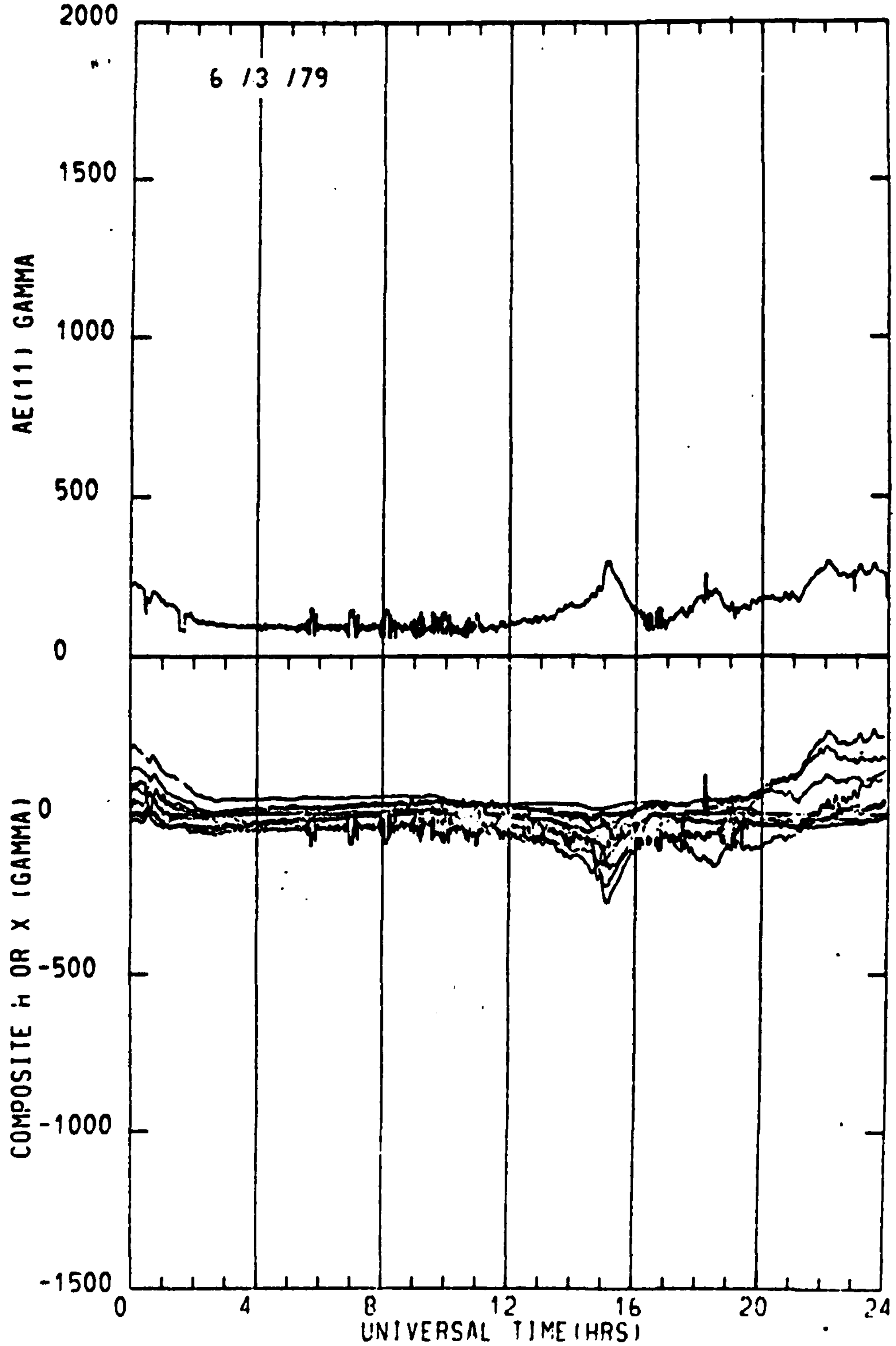


2000
5 /31/79
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

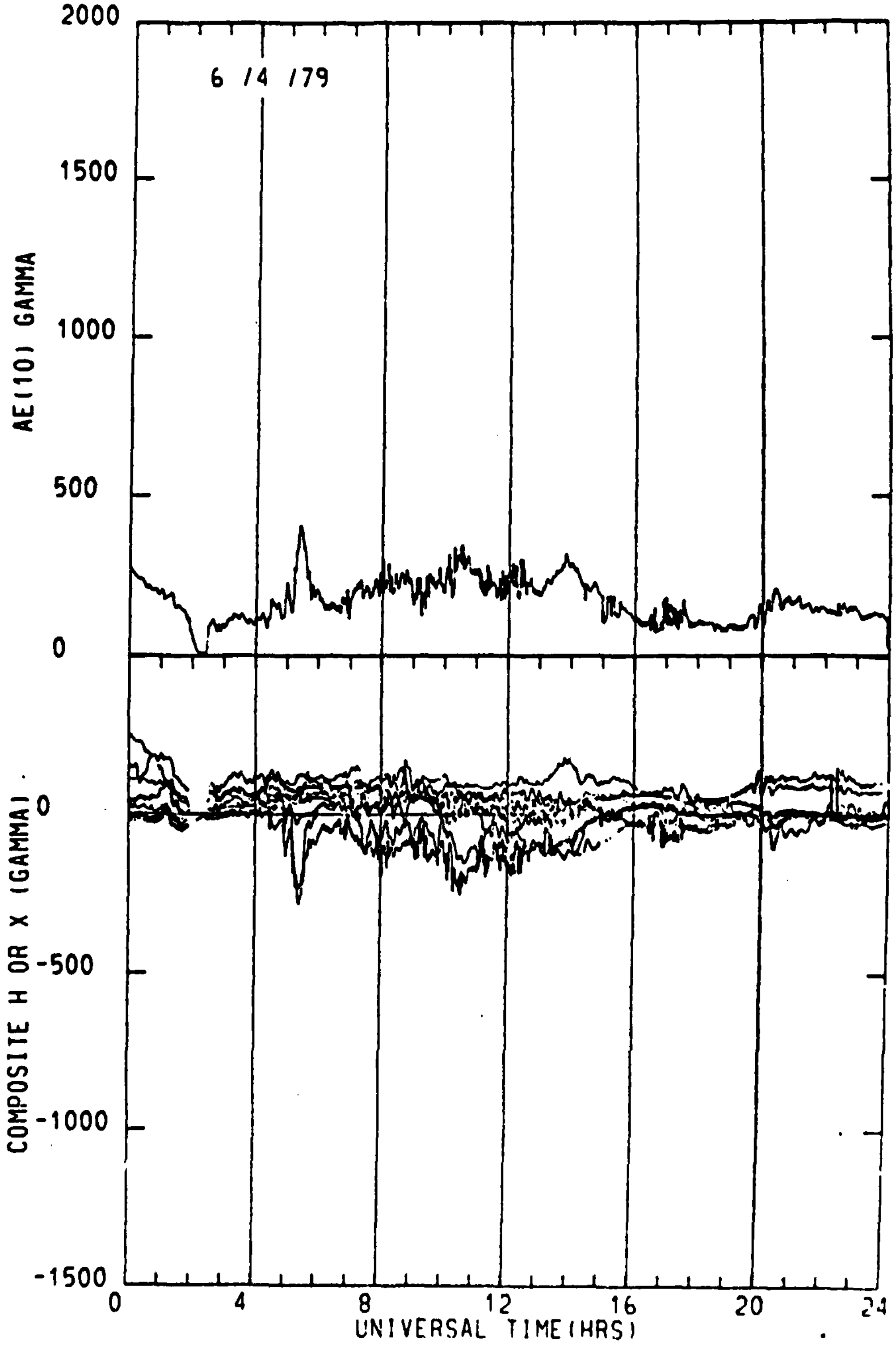

6 /1 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

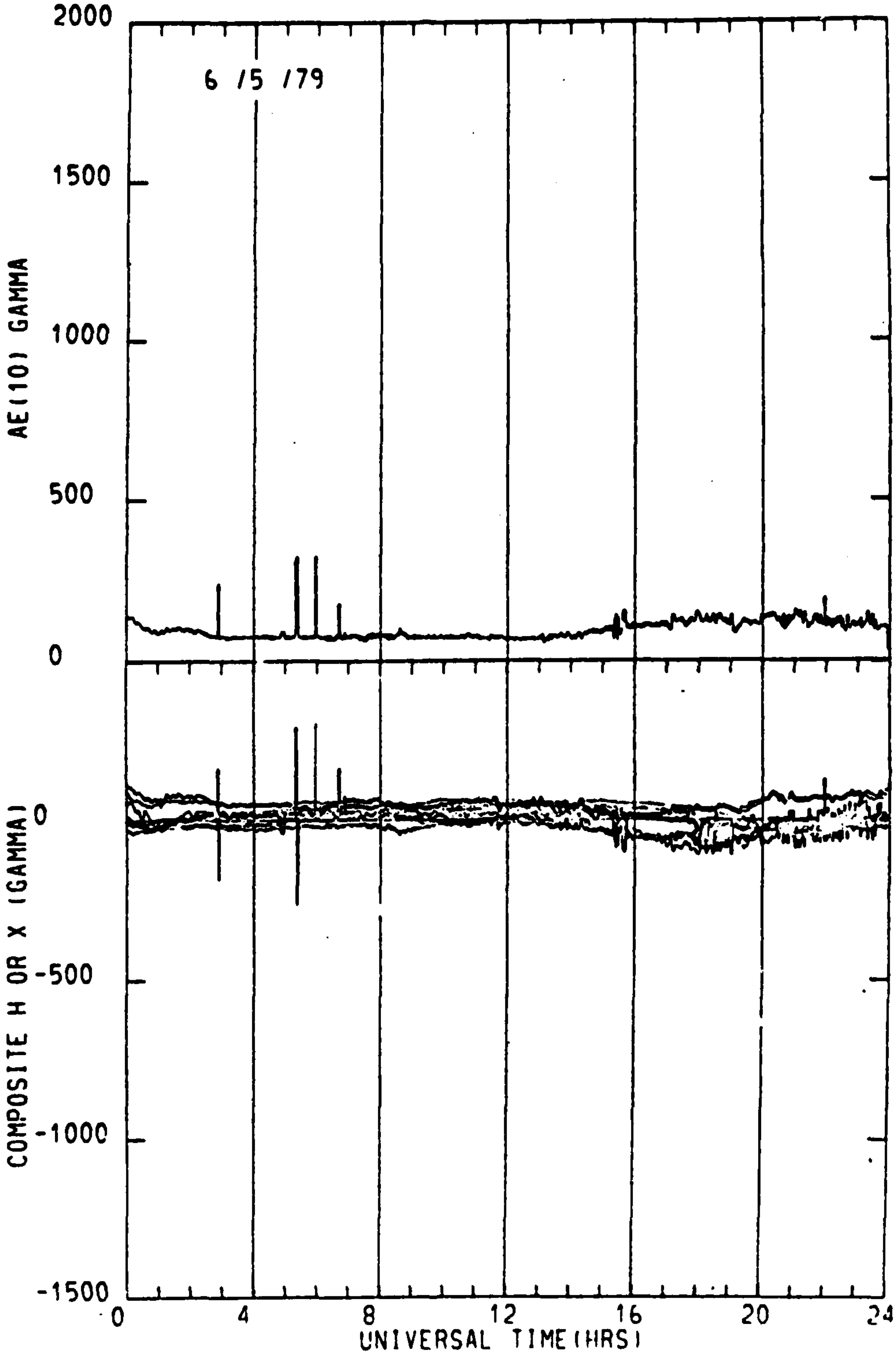


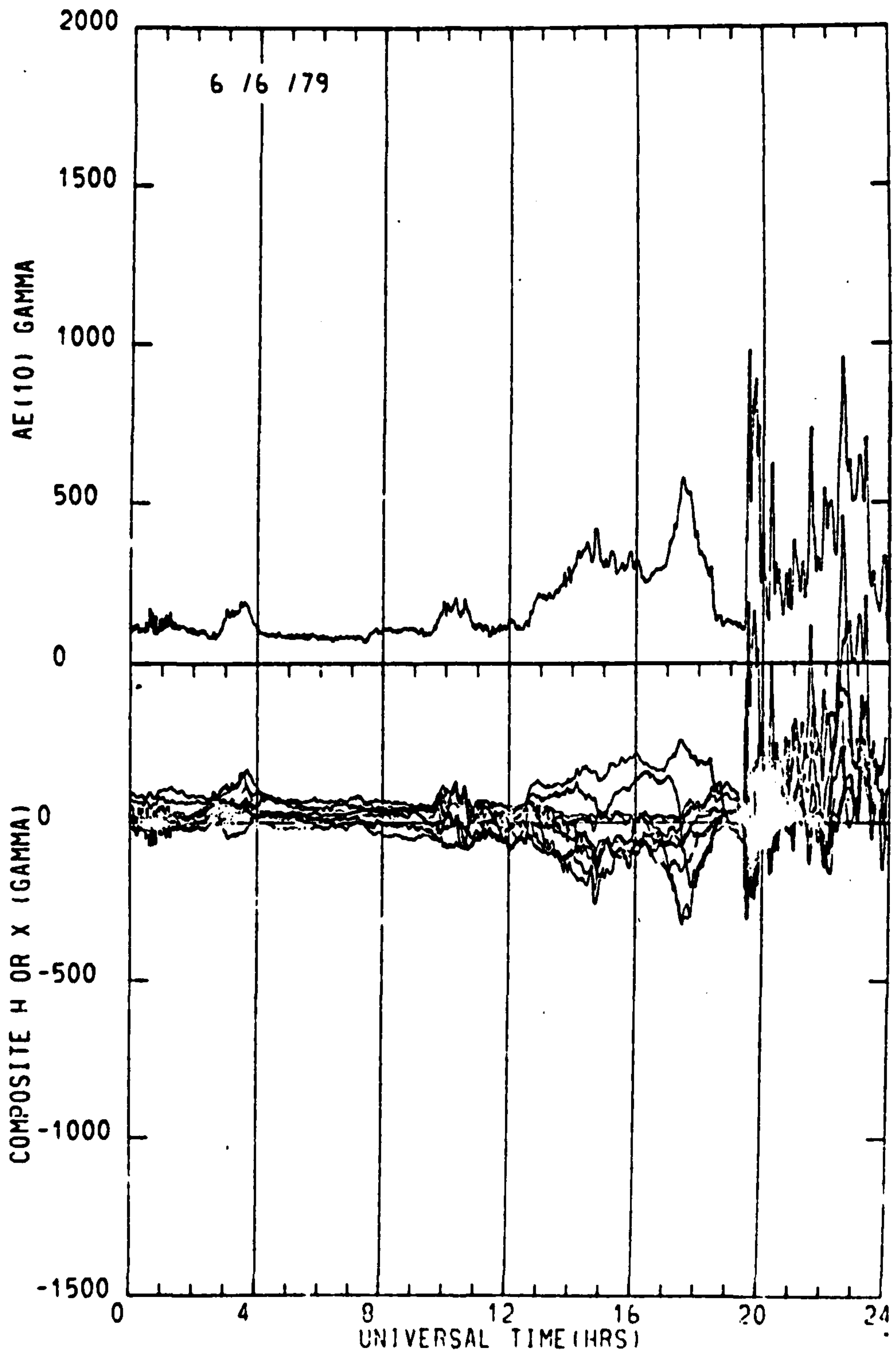
6 /2 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

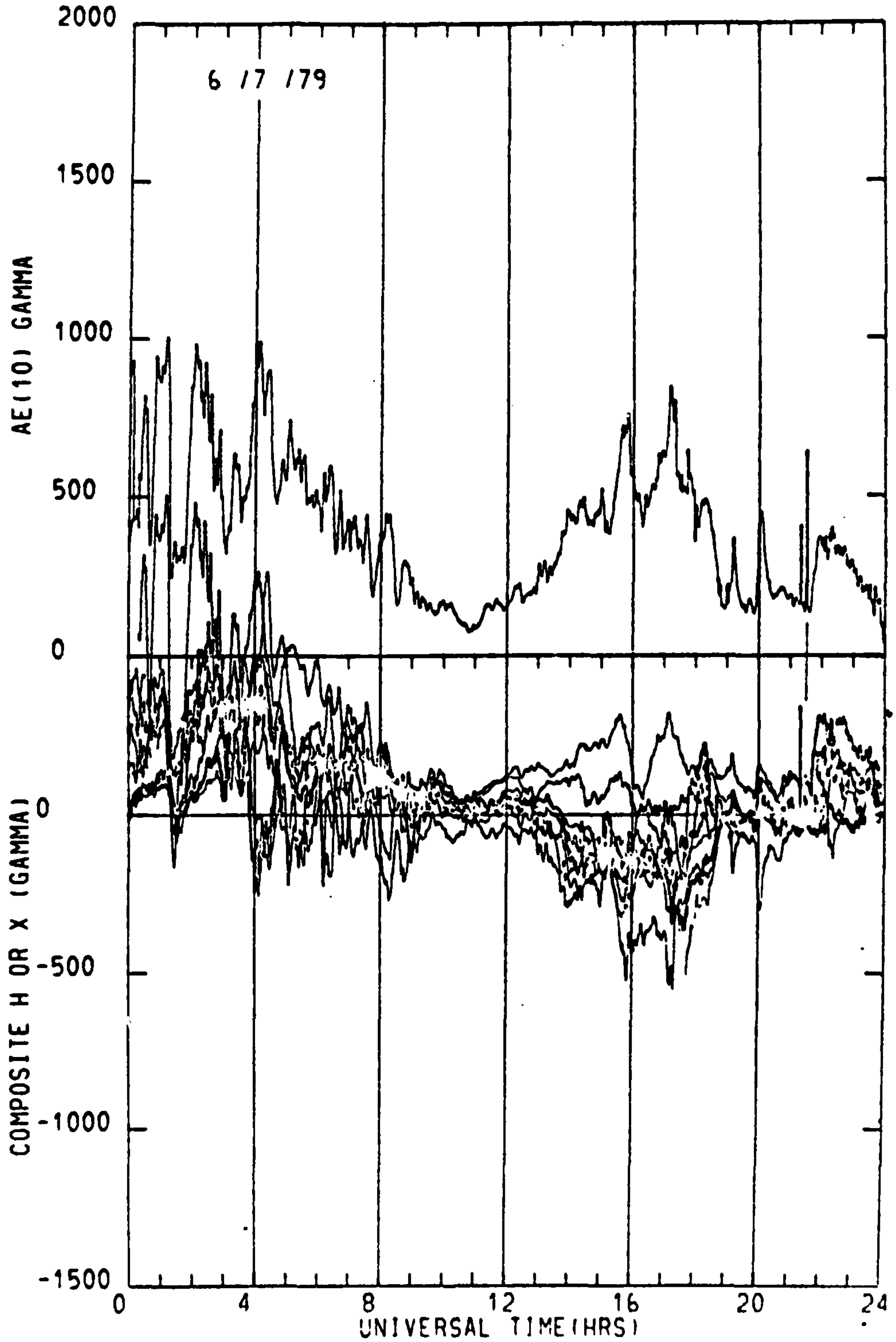


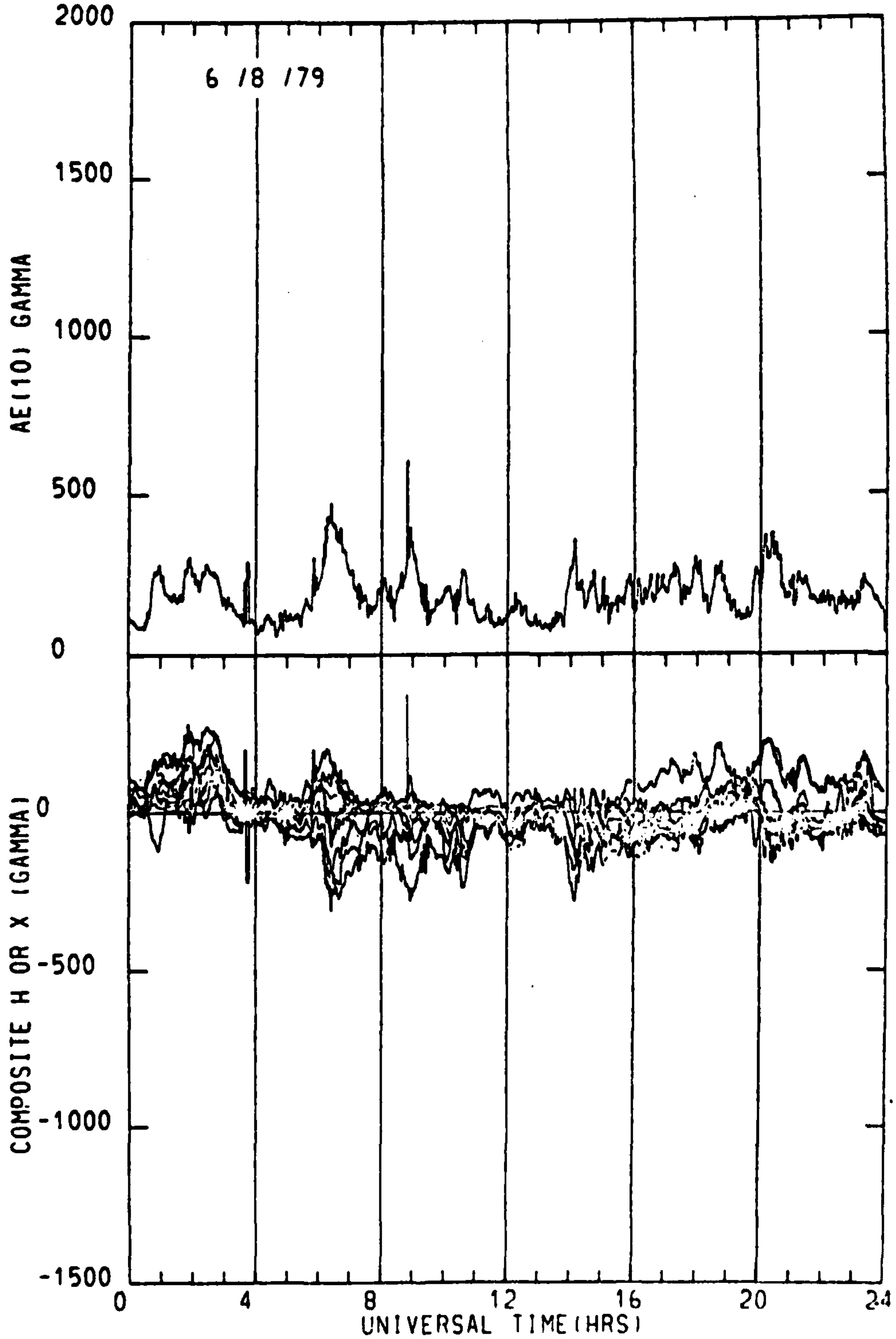
6 /3 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

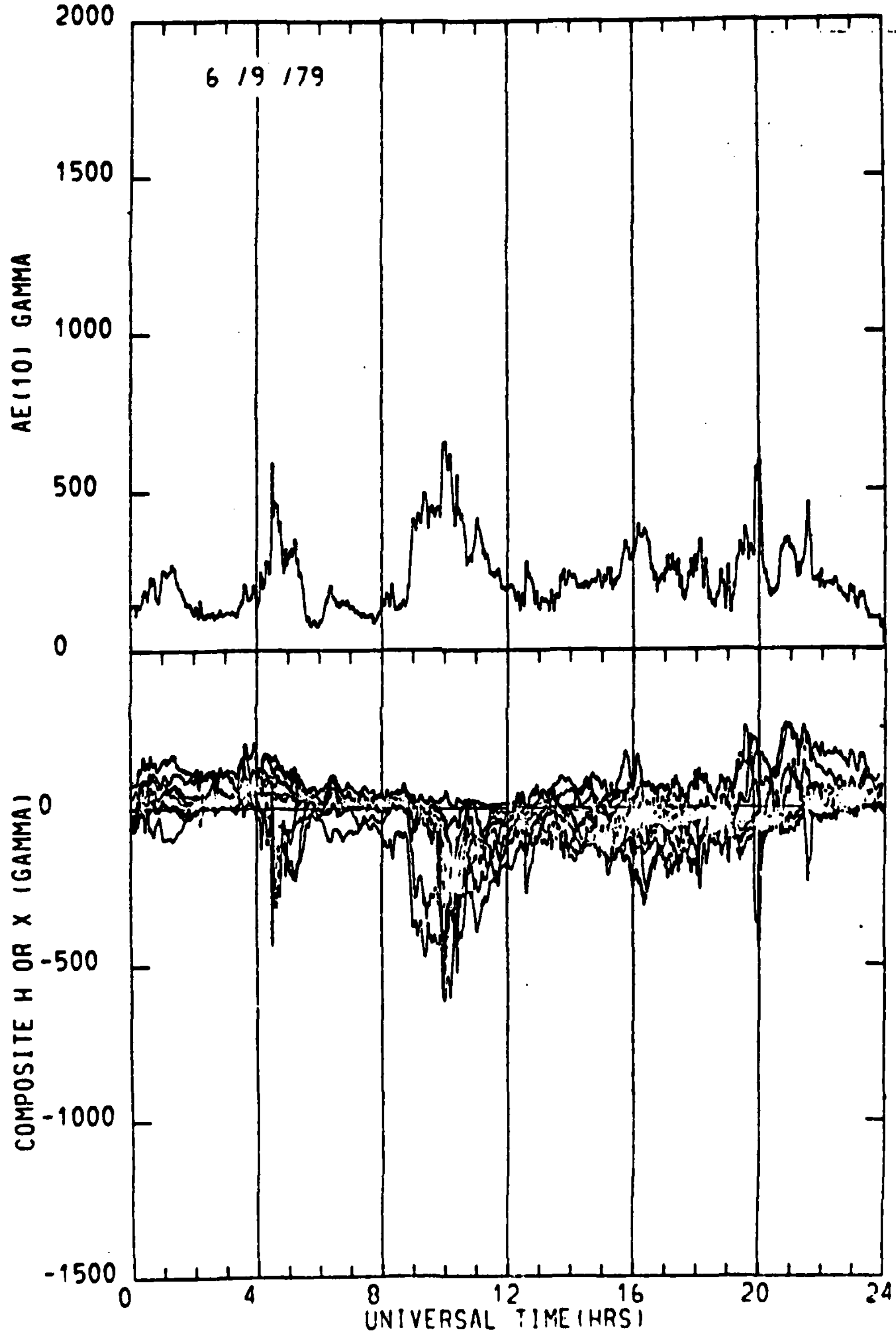

6 /4 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

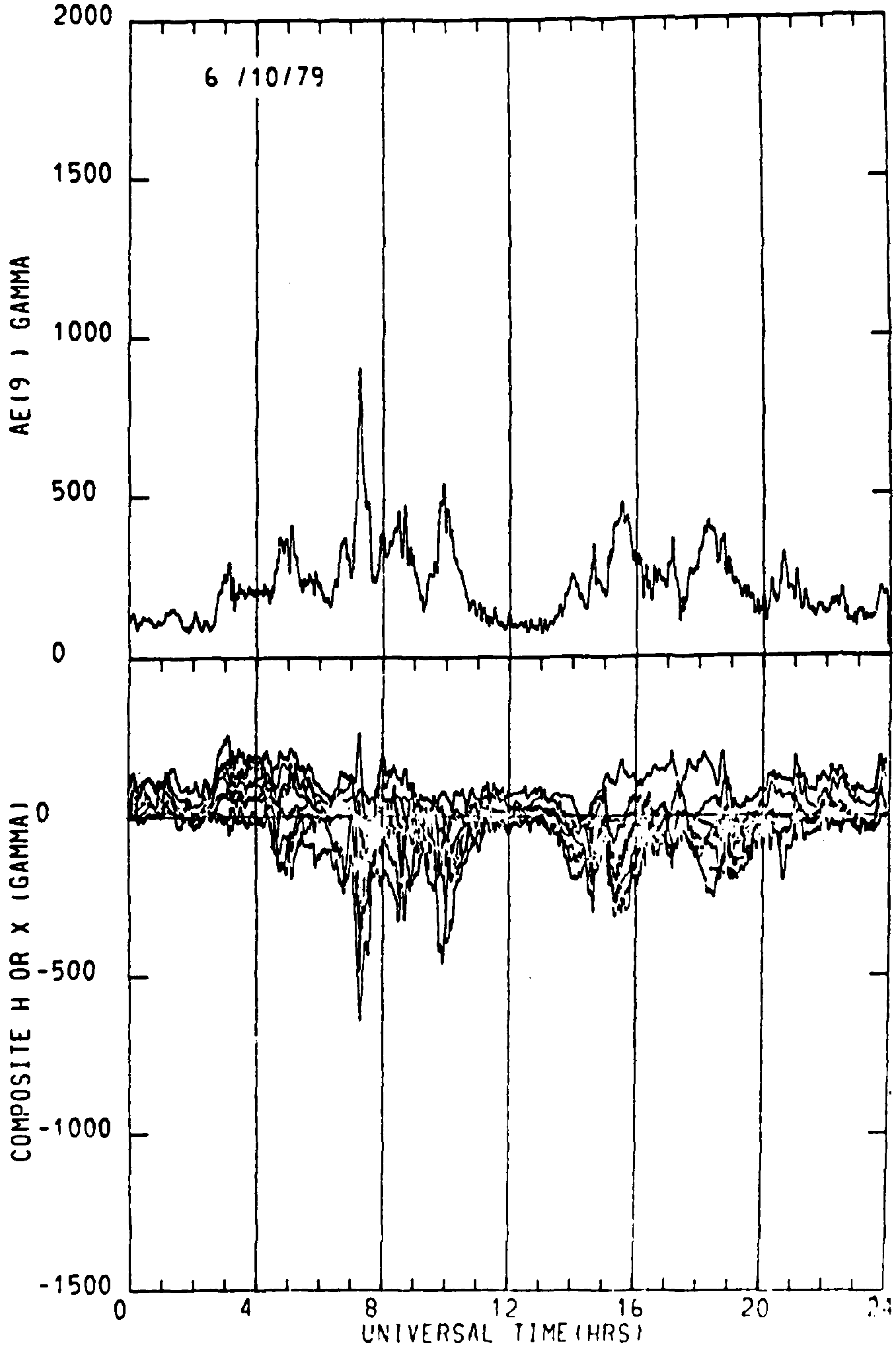

6 /5 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


6 /6 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(10) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


6 /7 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

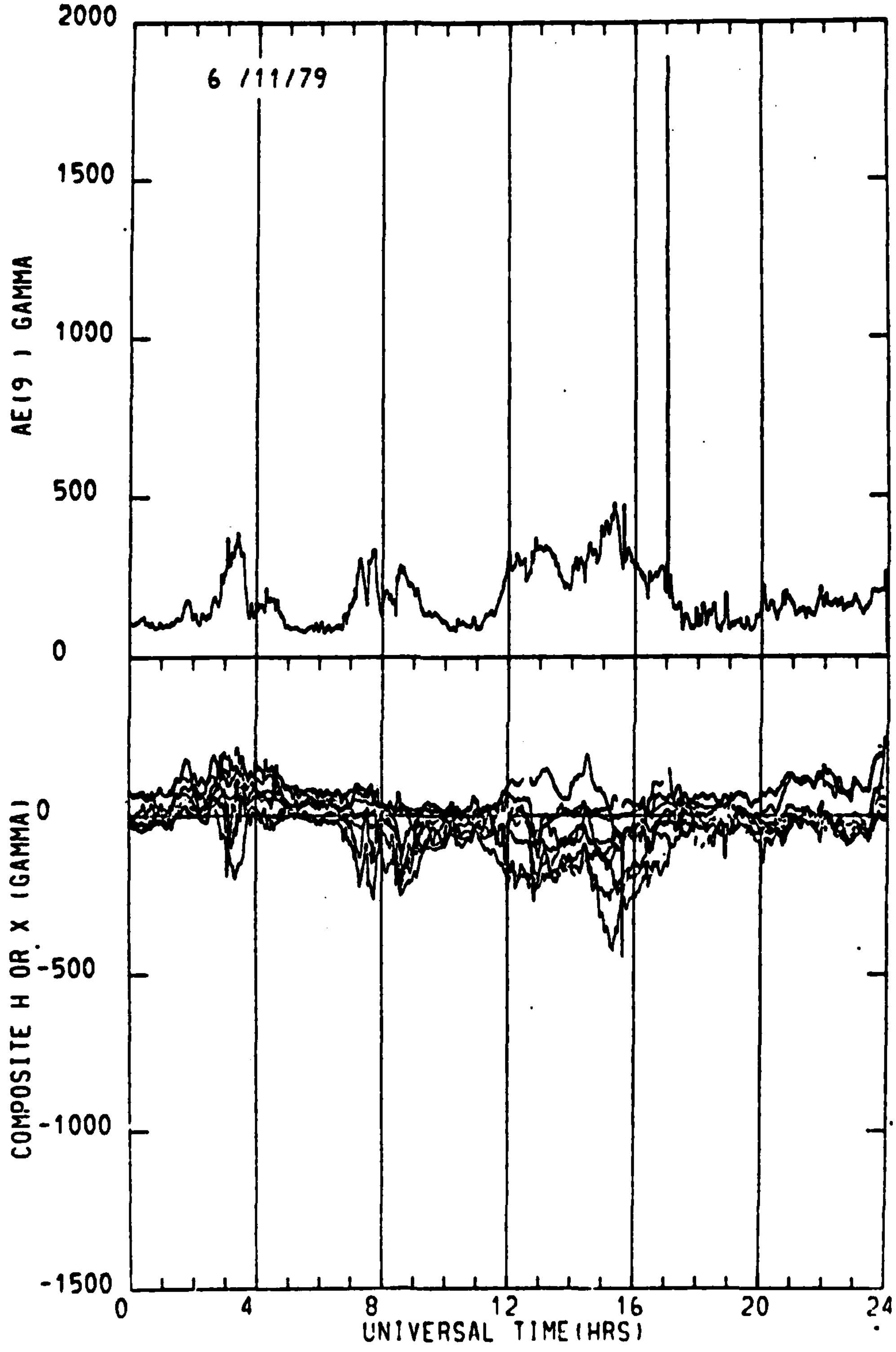

6 /8 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

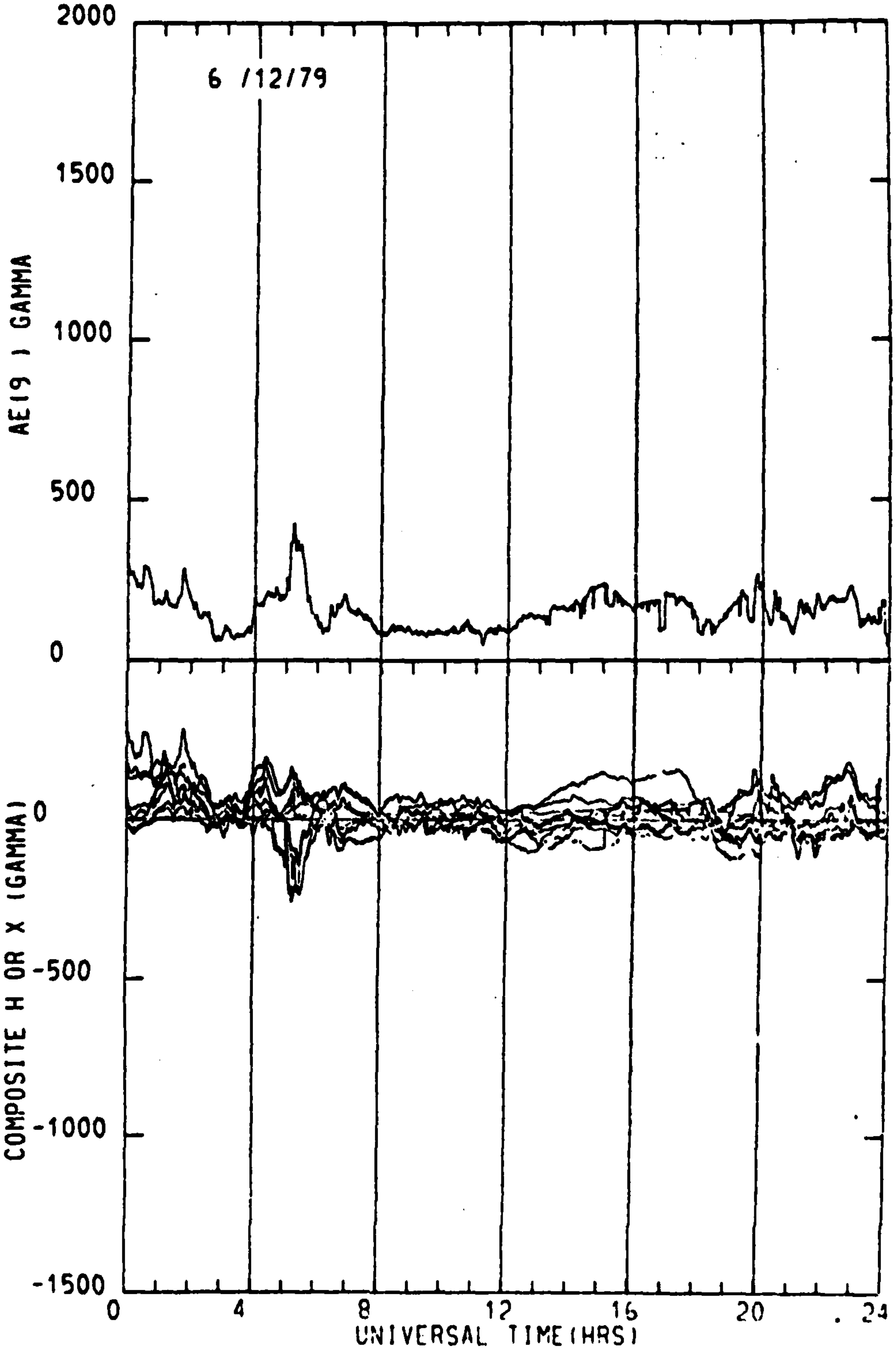

2000
1500
1000
500
0
6 /19 /79
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

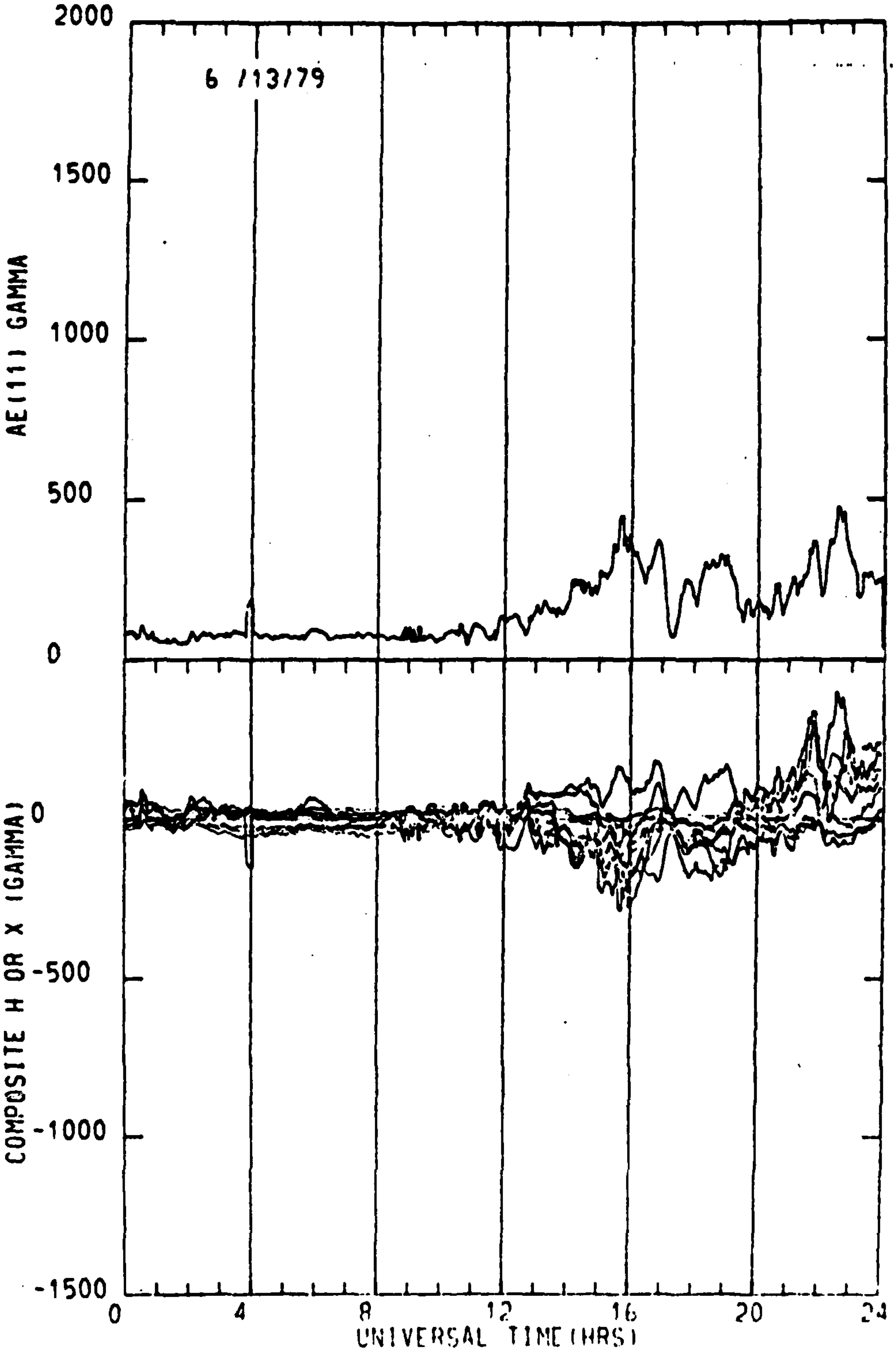

6 /10/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

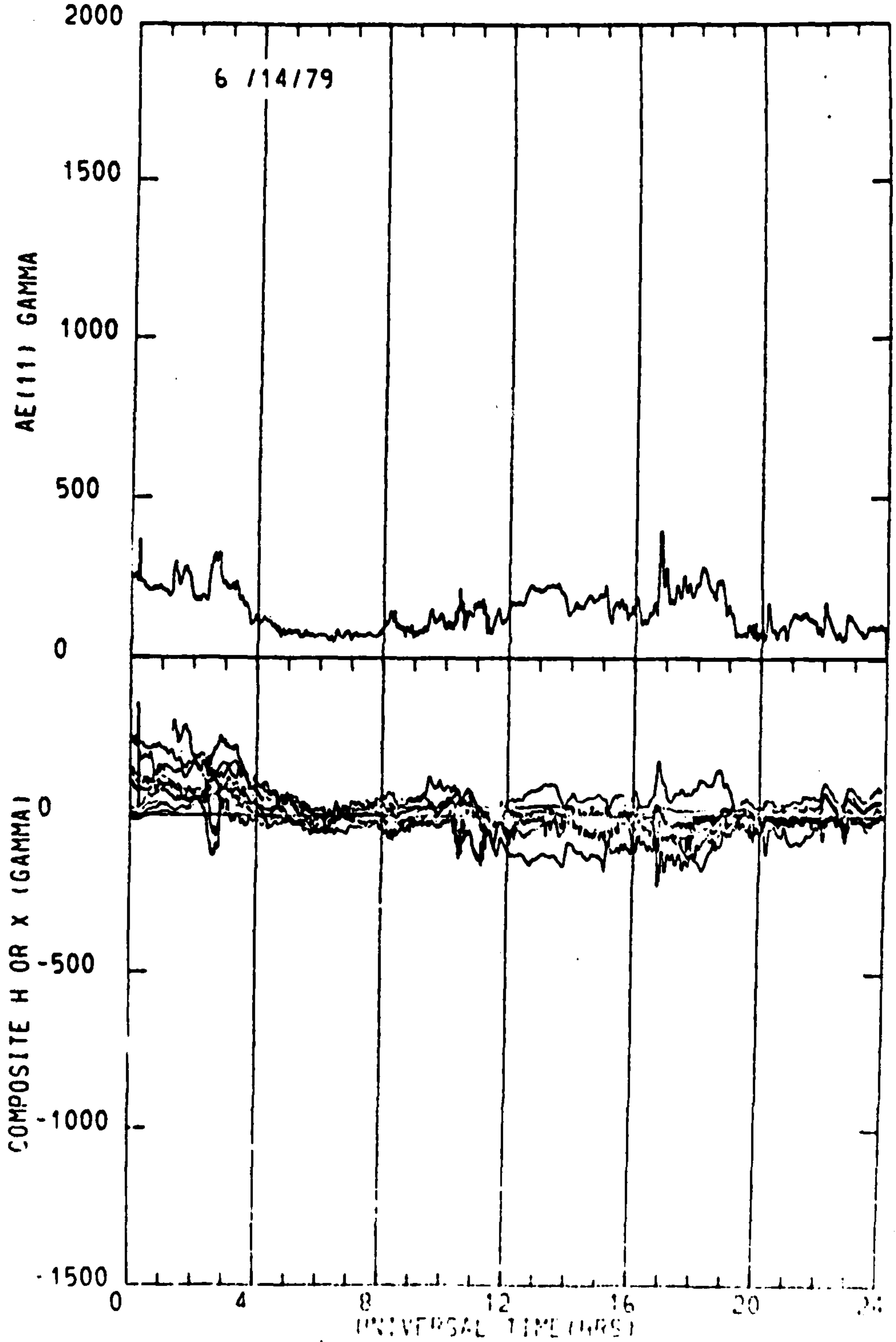
AD-A104 109 JOHNS HOPKINS UNIV LAUREL MD APPLIED PHYSICS LAB F/G 8/14
MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (--ETC(U)
DEC 80 C MENG MIPR-FY71218000009
UNCLASSIFIED AFGL-TR-81-0104 NL

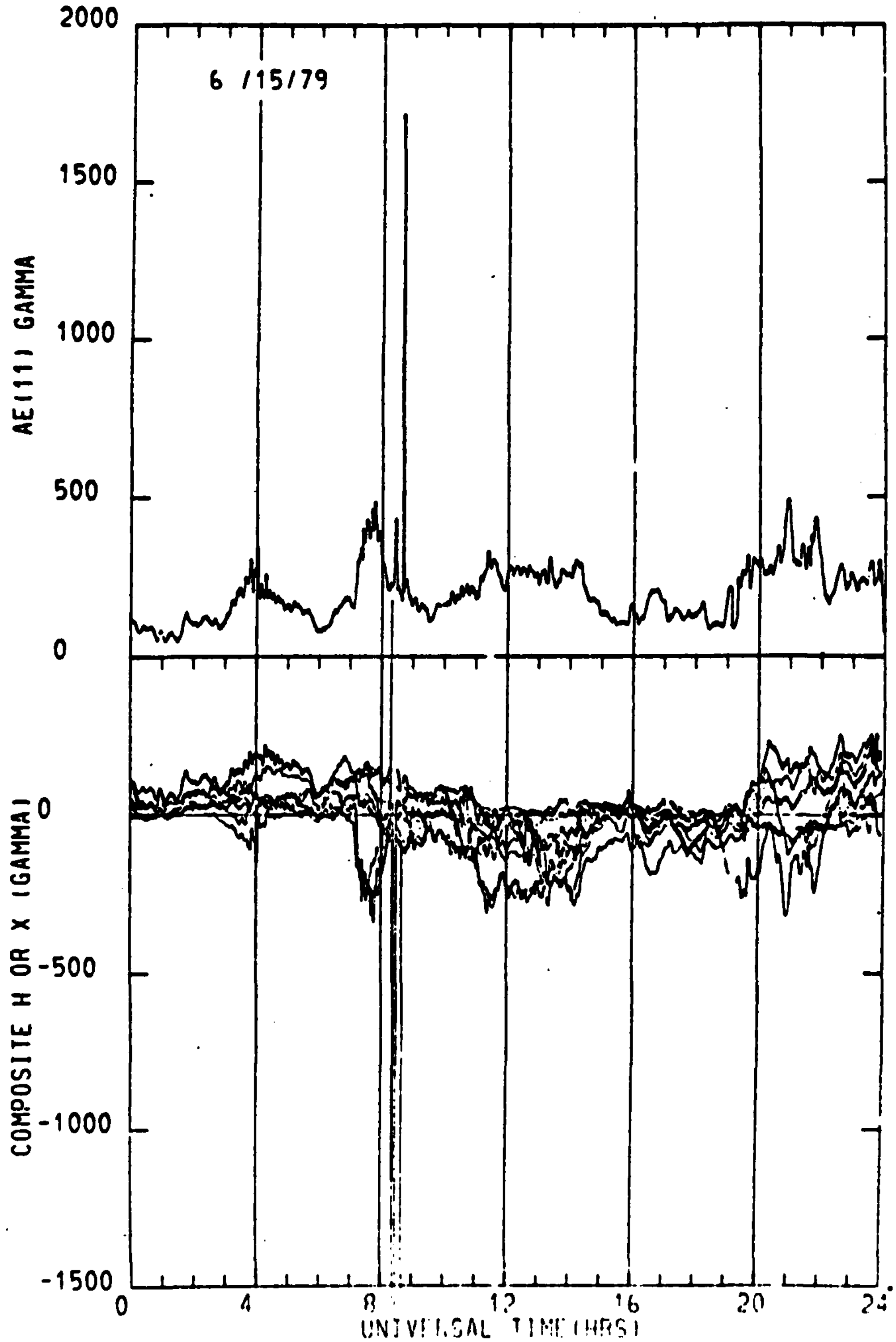
3 OF 5
AD
A104109


6 /11/79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

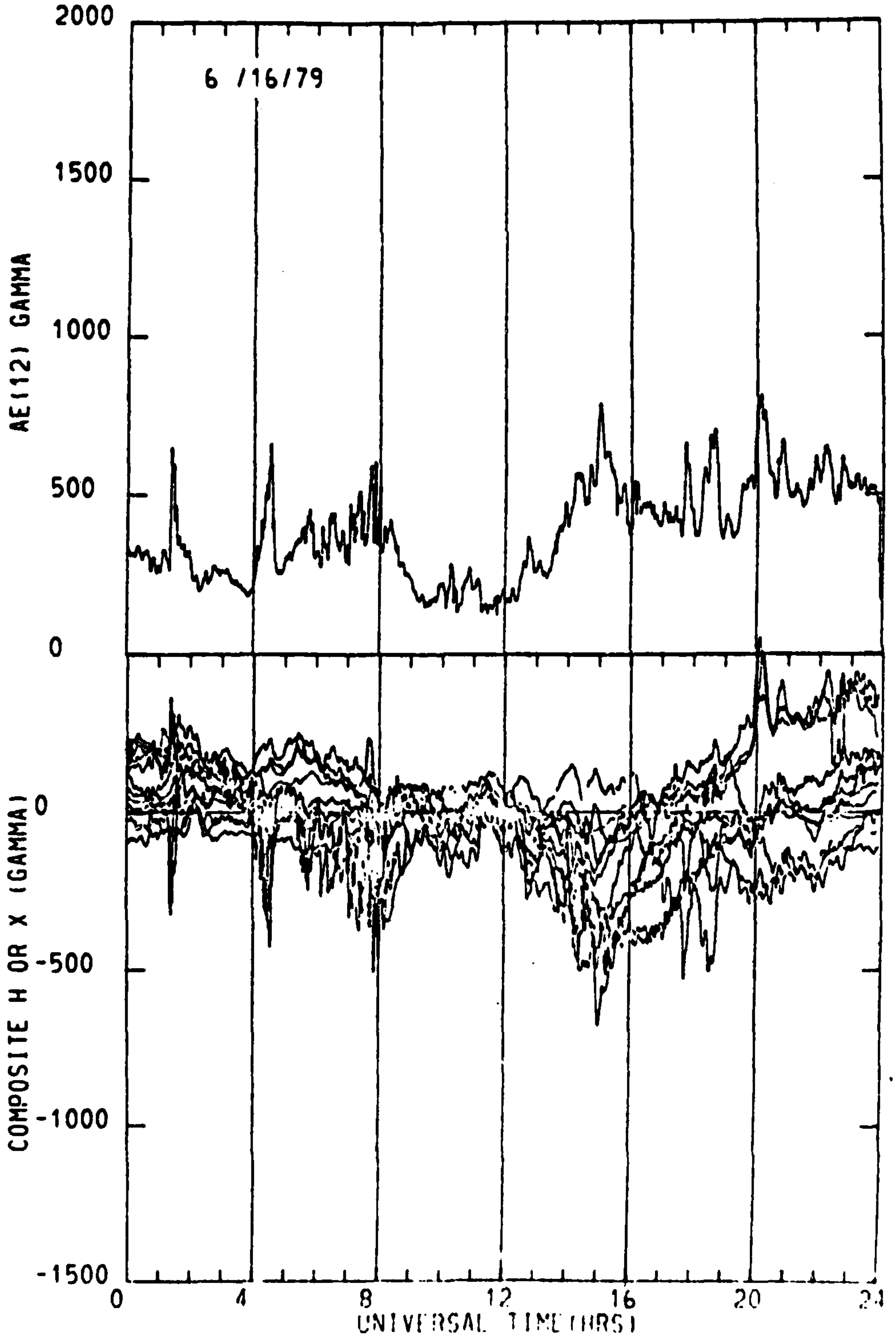

6 /12/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


6 /13/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

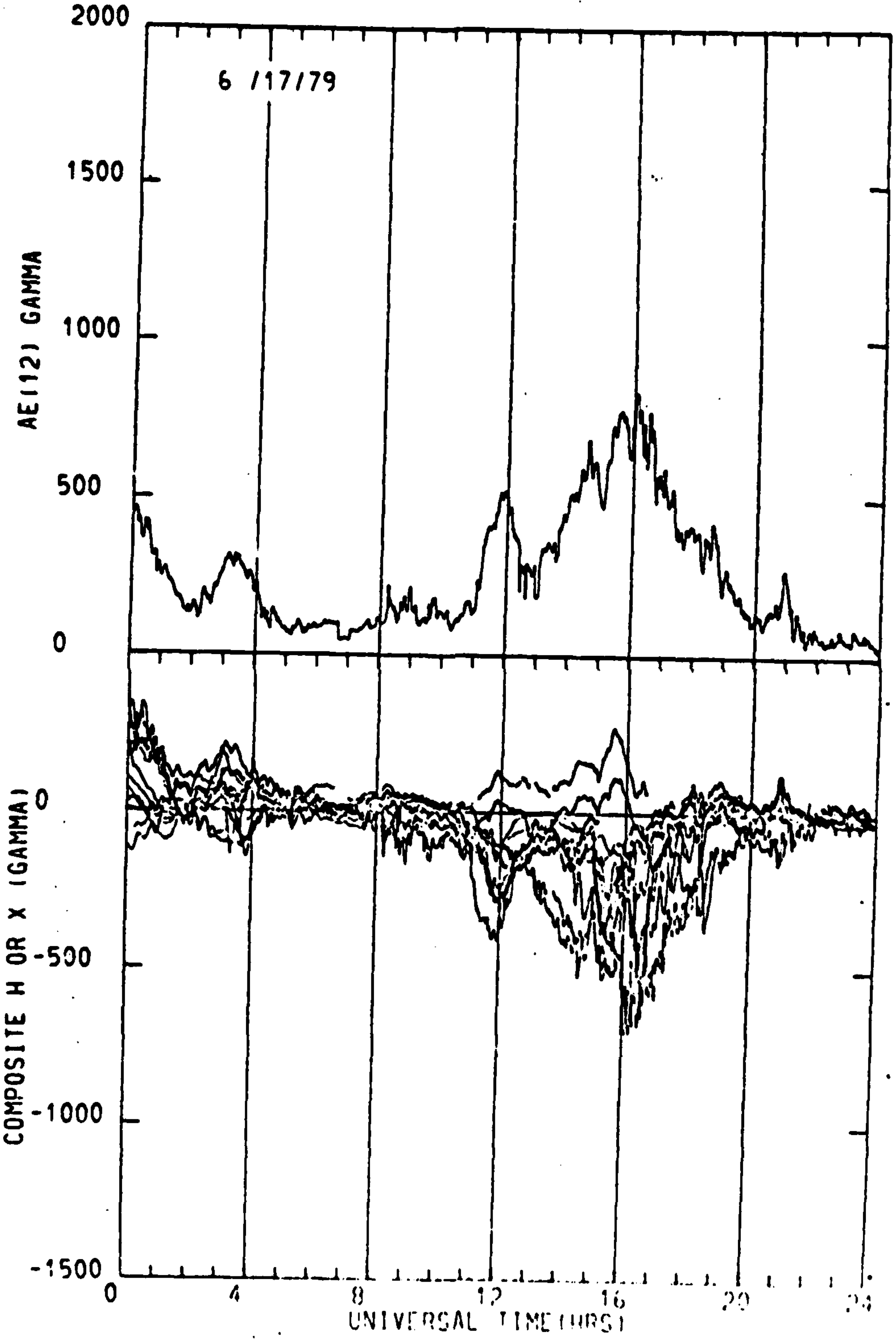

2000
1500
1000
500
0
-500
-1000
-1500
6 /14/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

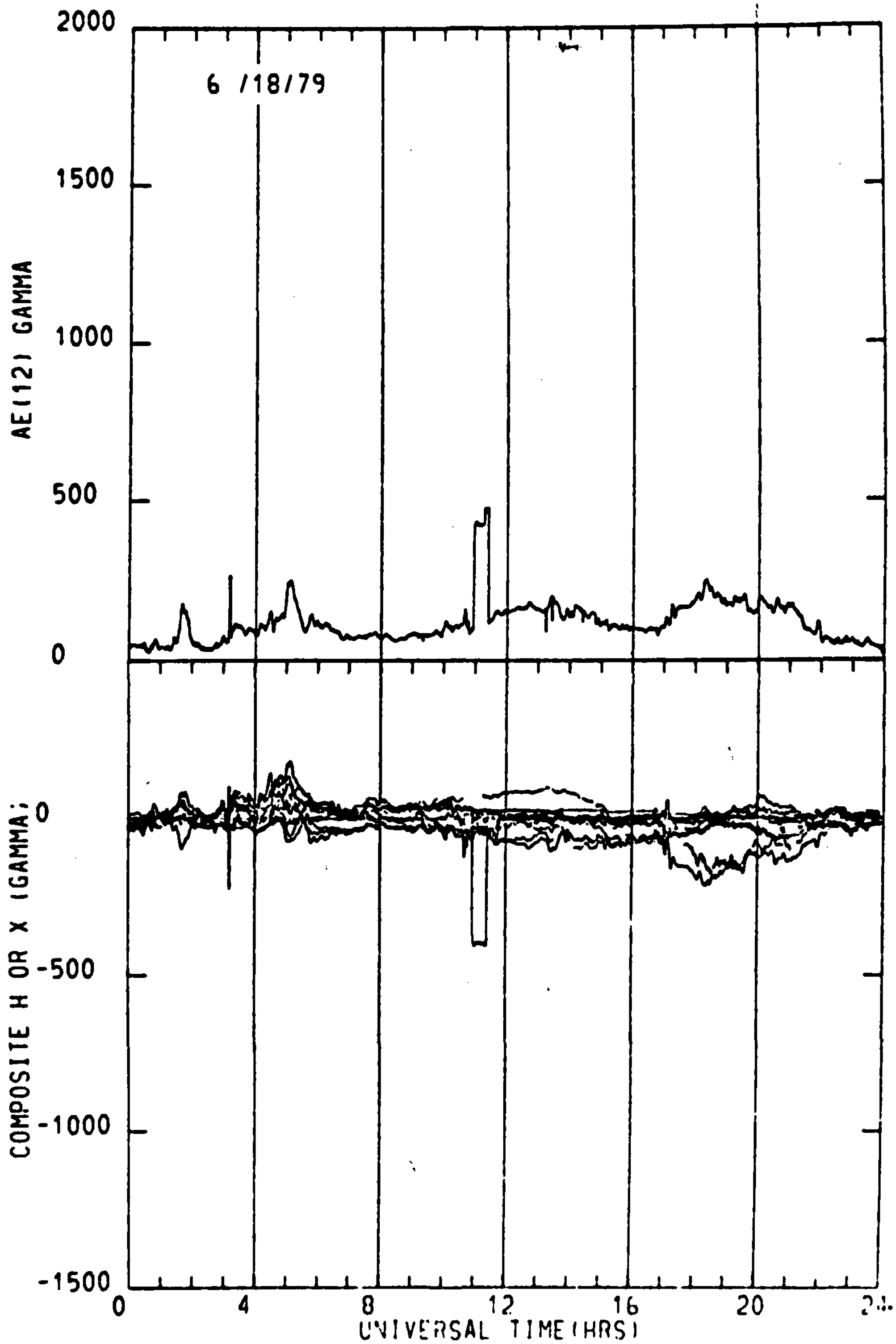


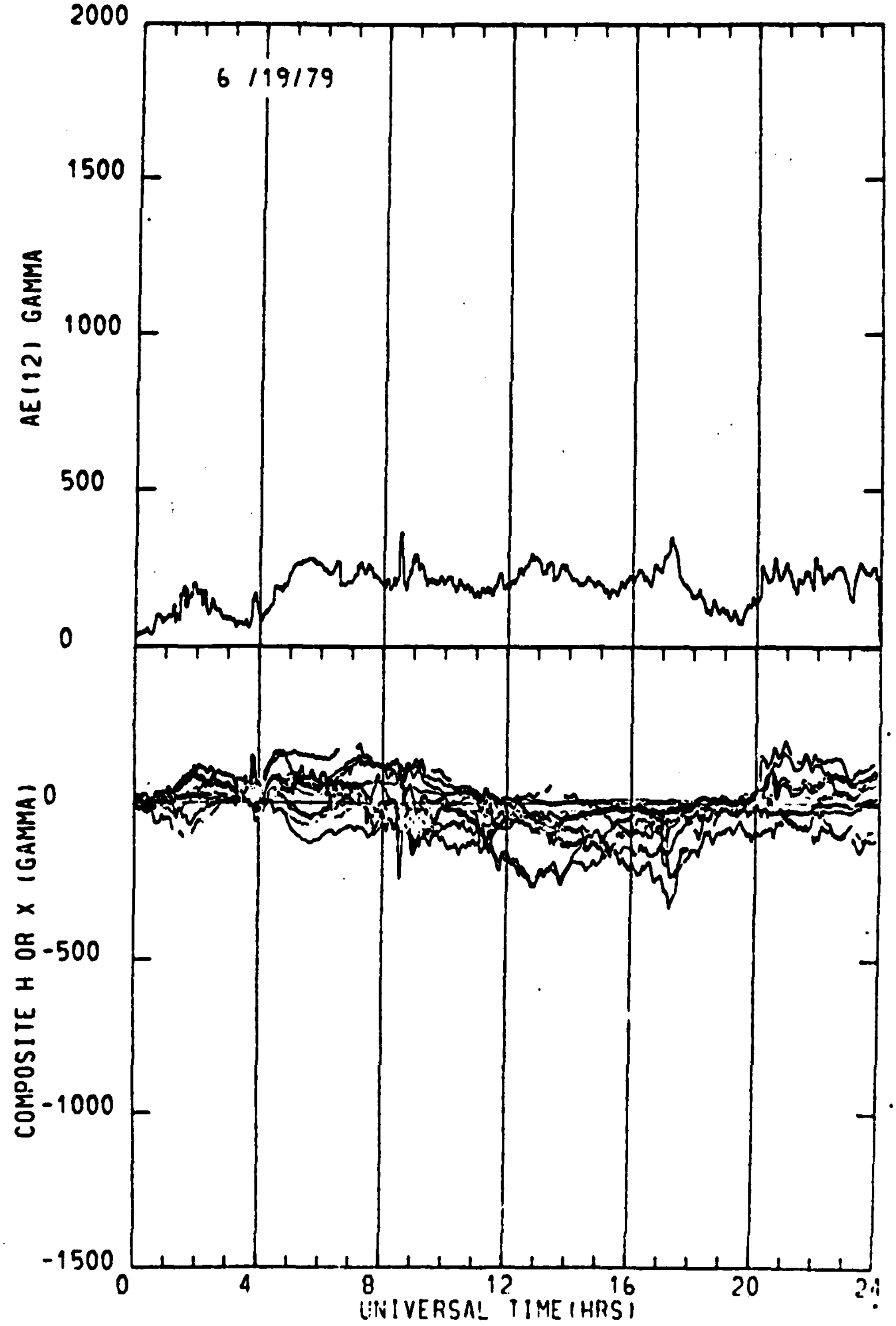
2000
6 /15/79
1500
AE(11) GAMMA
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



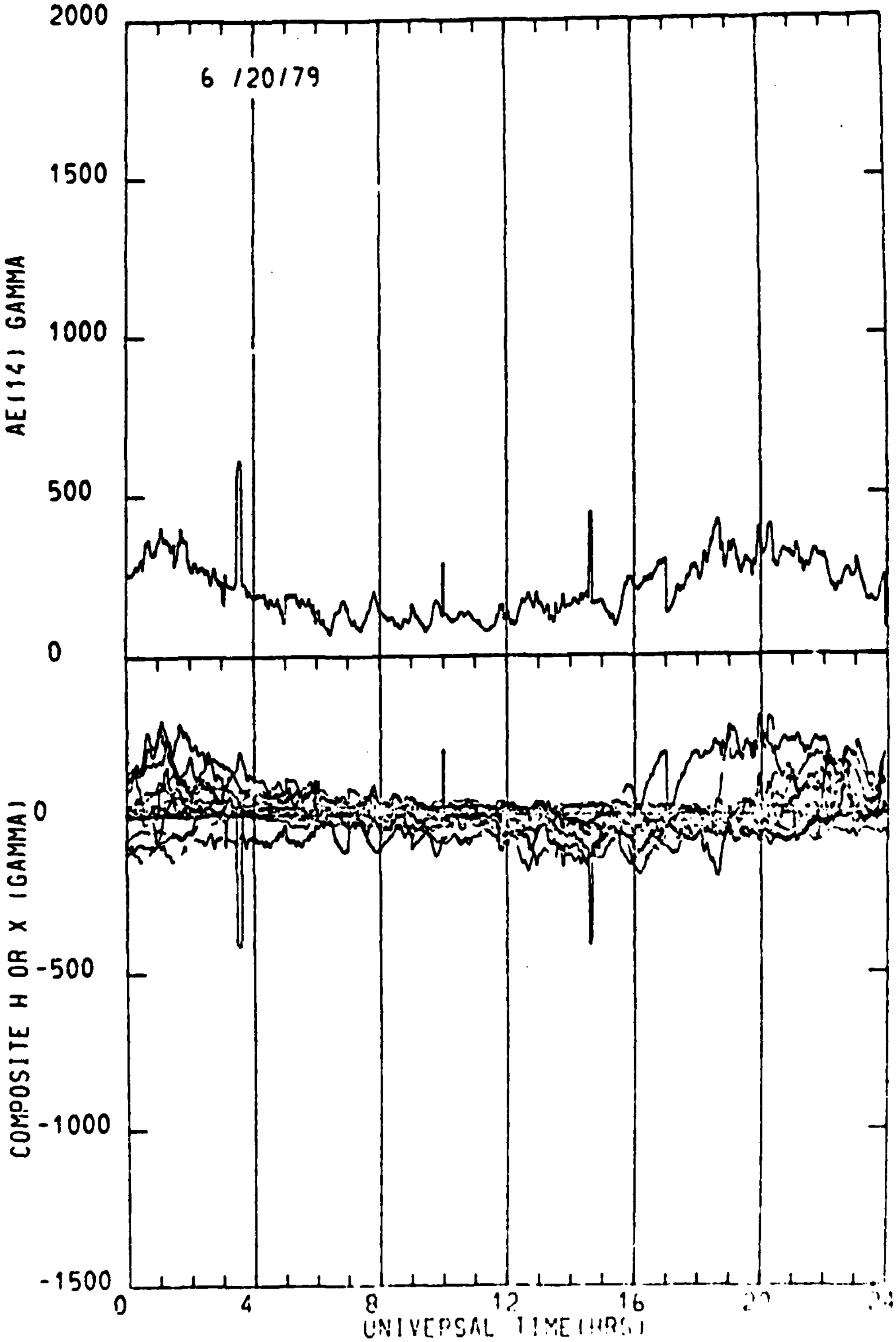
6 /16/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

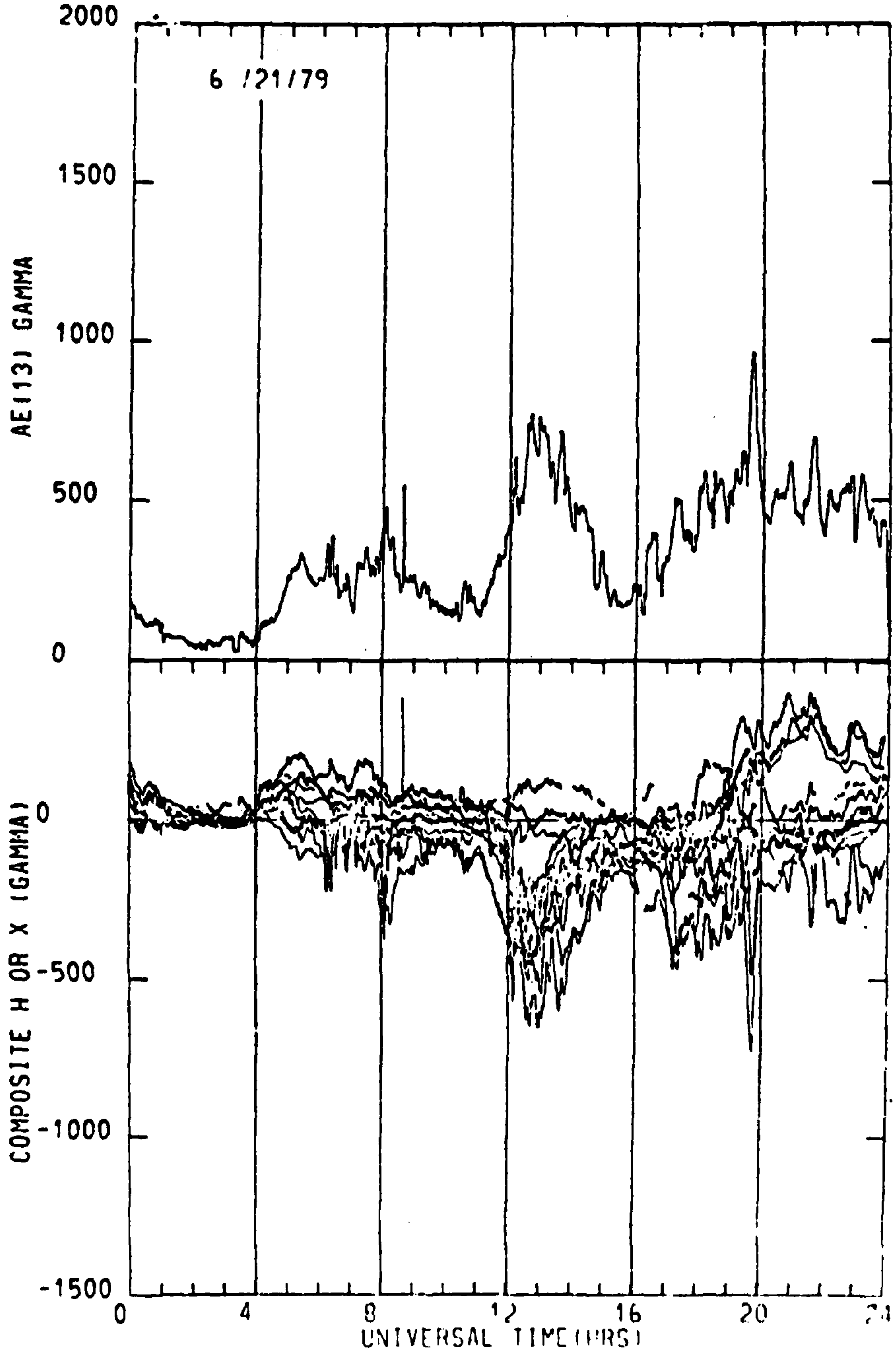

6 /17/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

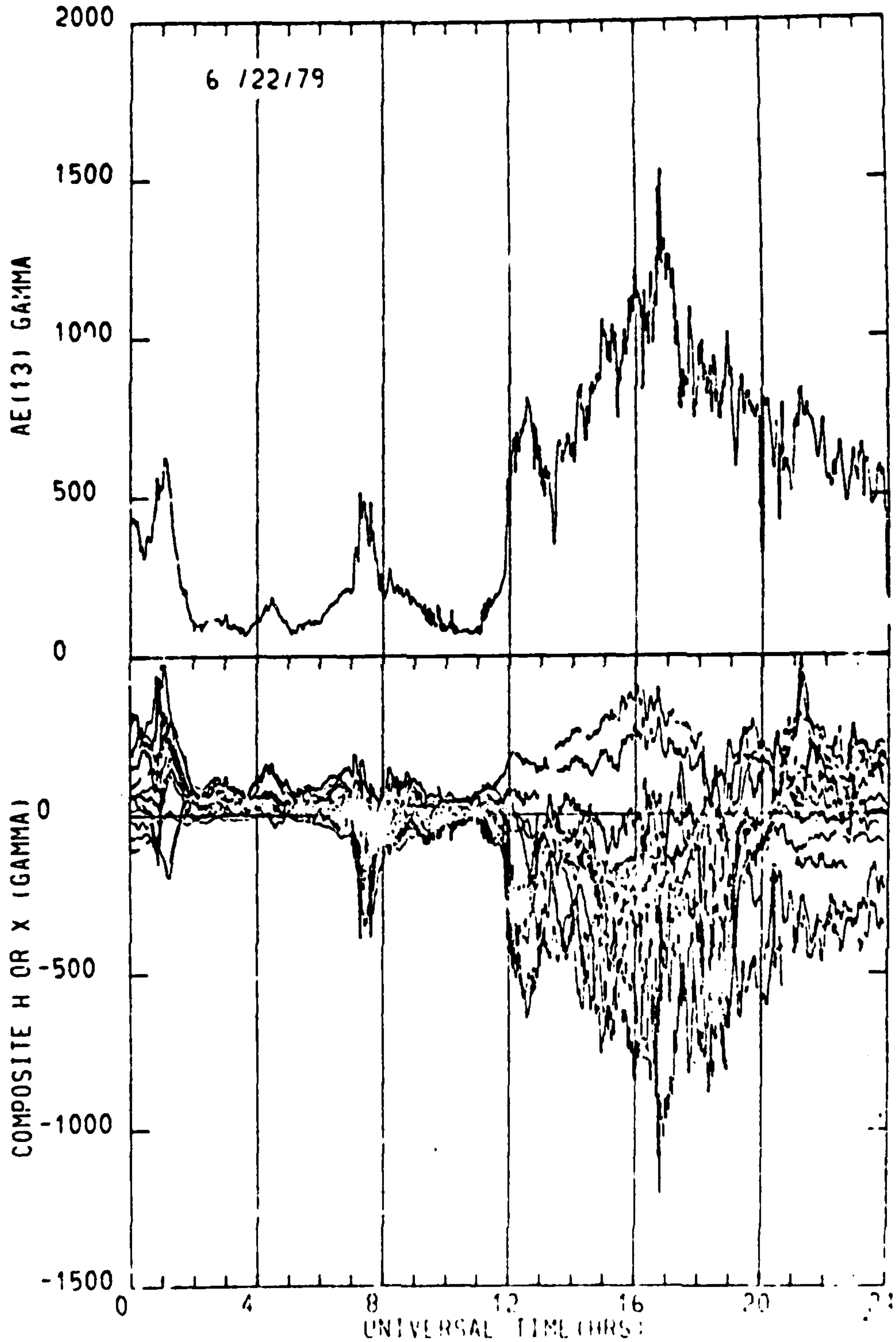

6 /18/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

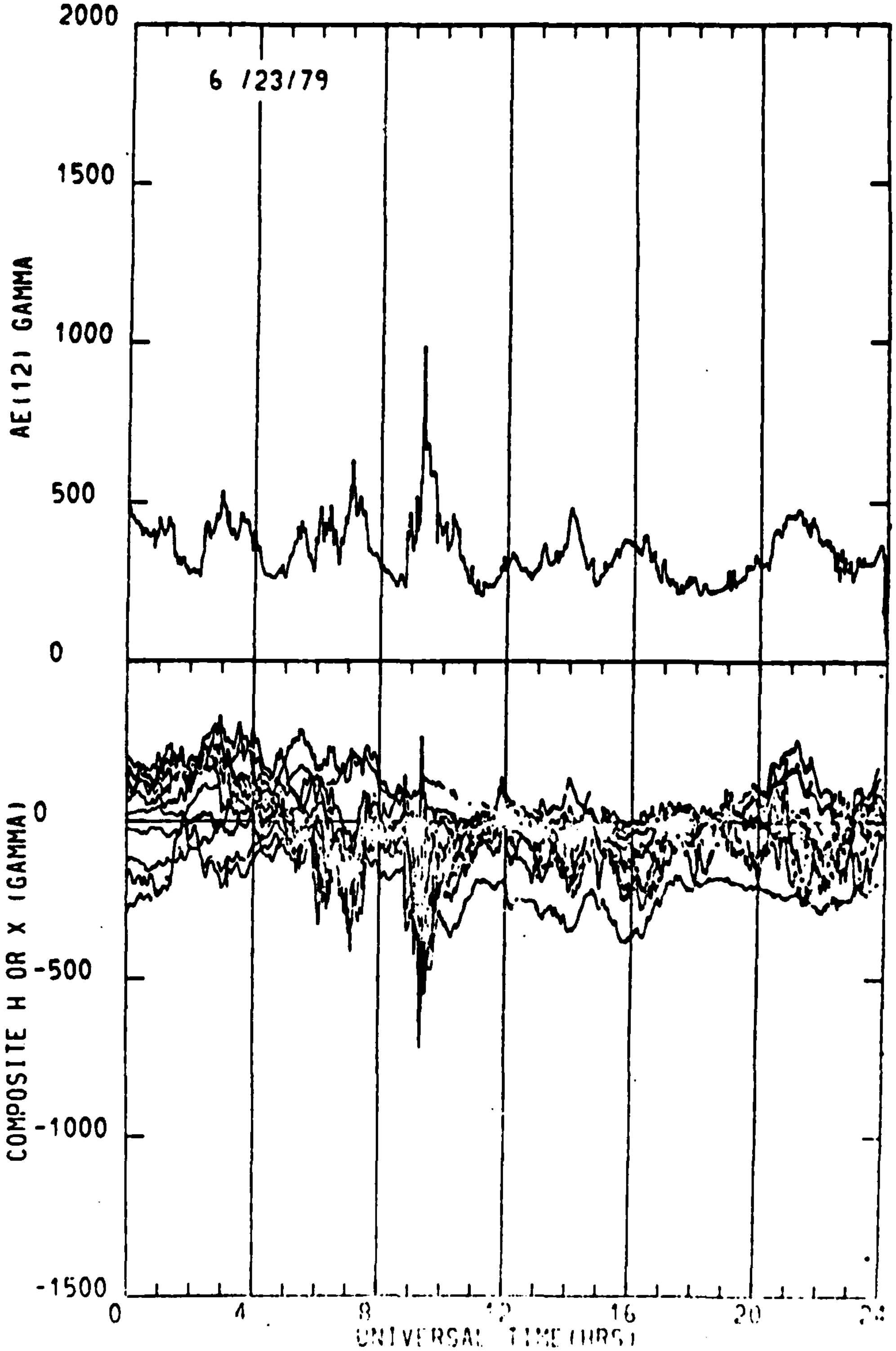


6 /19/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

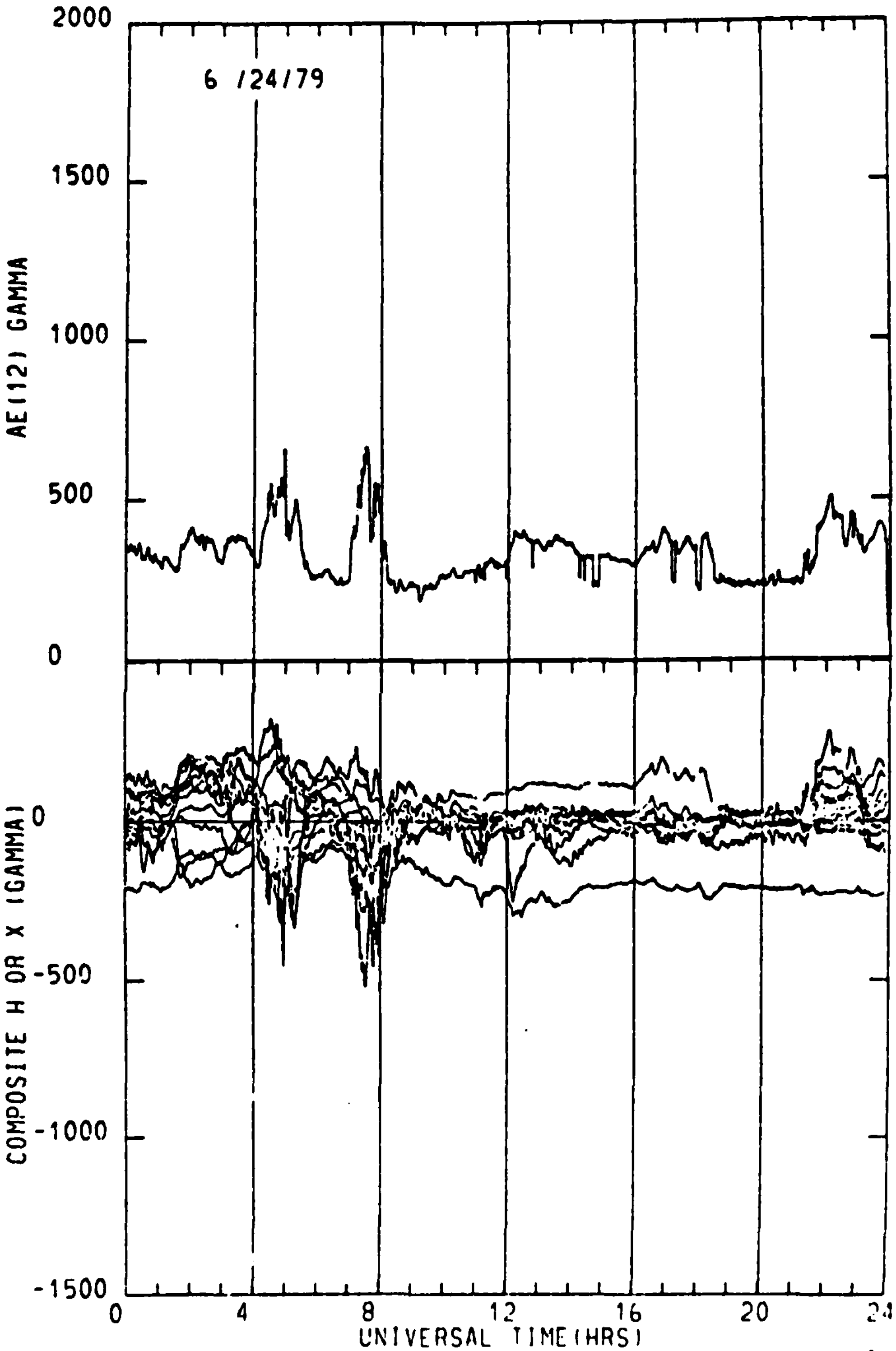

6 /20/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
UNIVERSAL TIME(HRS)

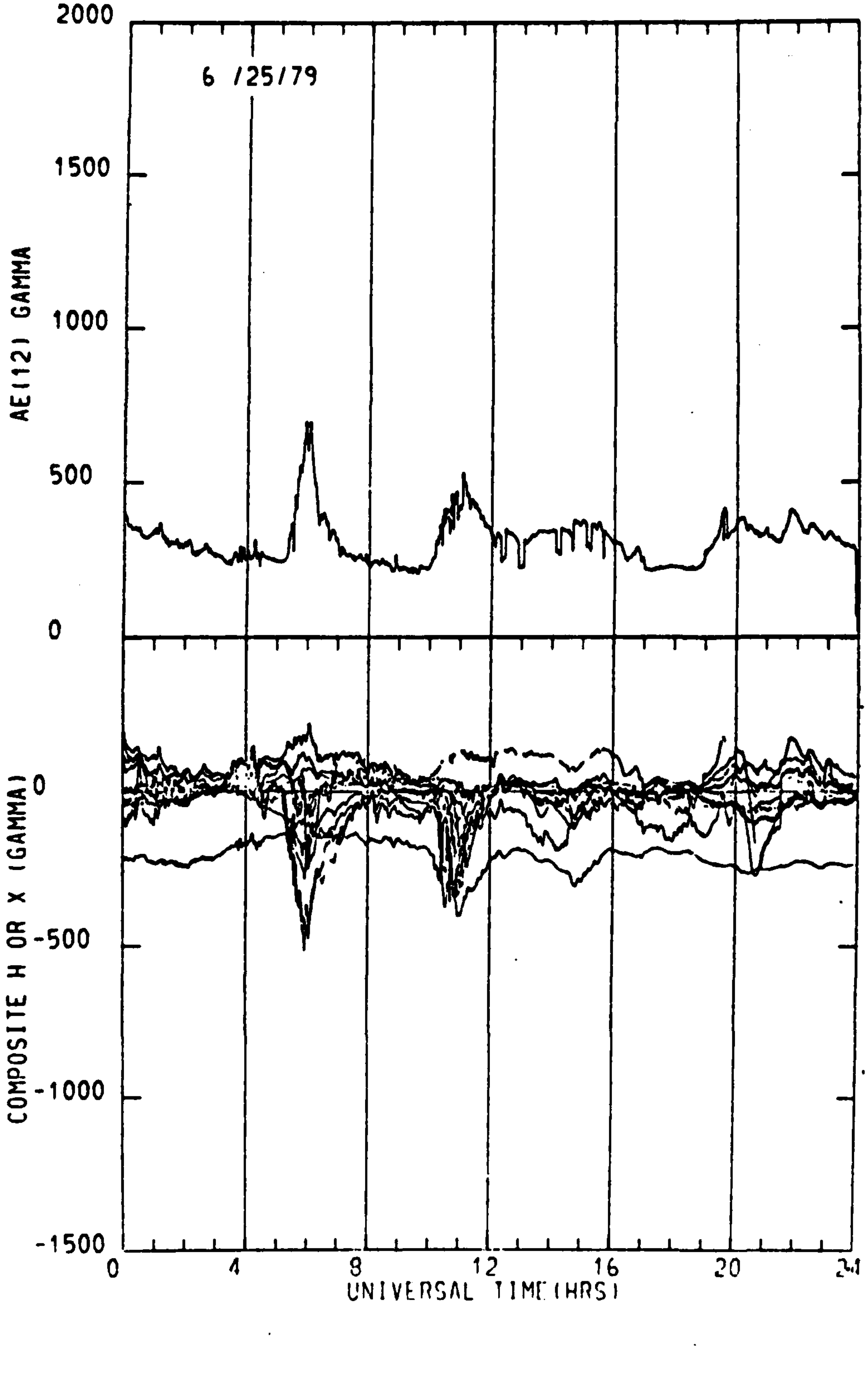

6 /21/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

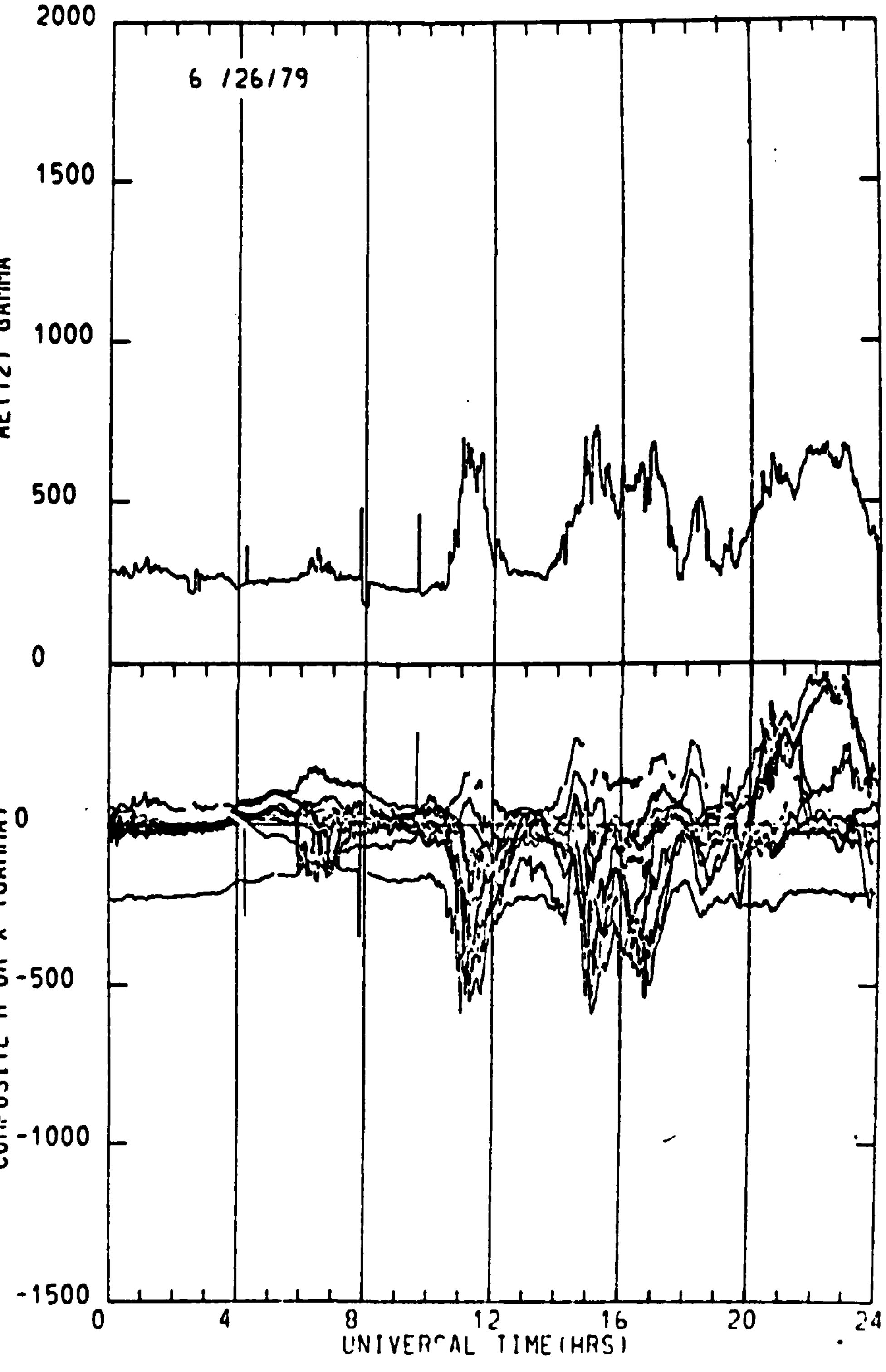

6 /22/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
16
UNIVERSAL TIME (HRS)

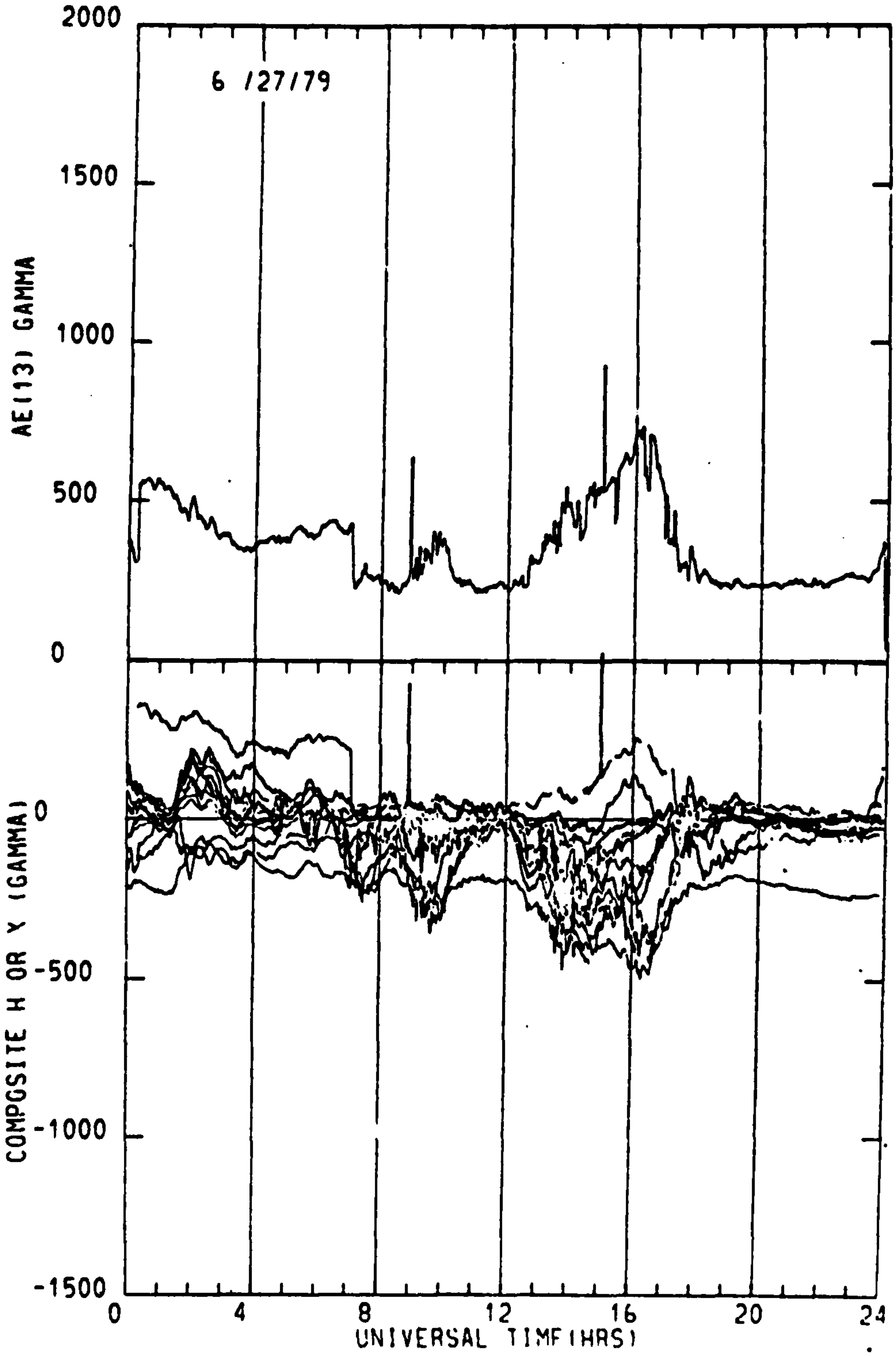


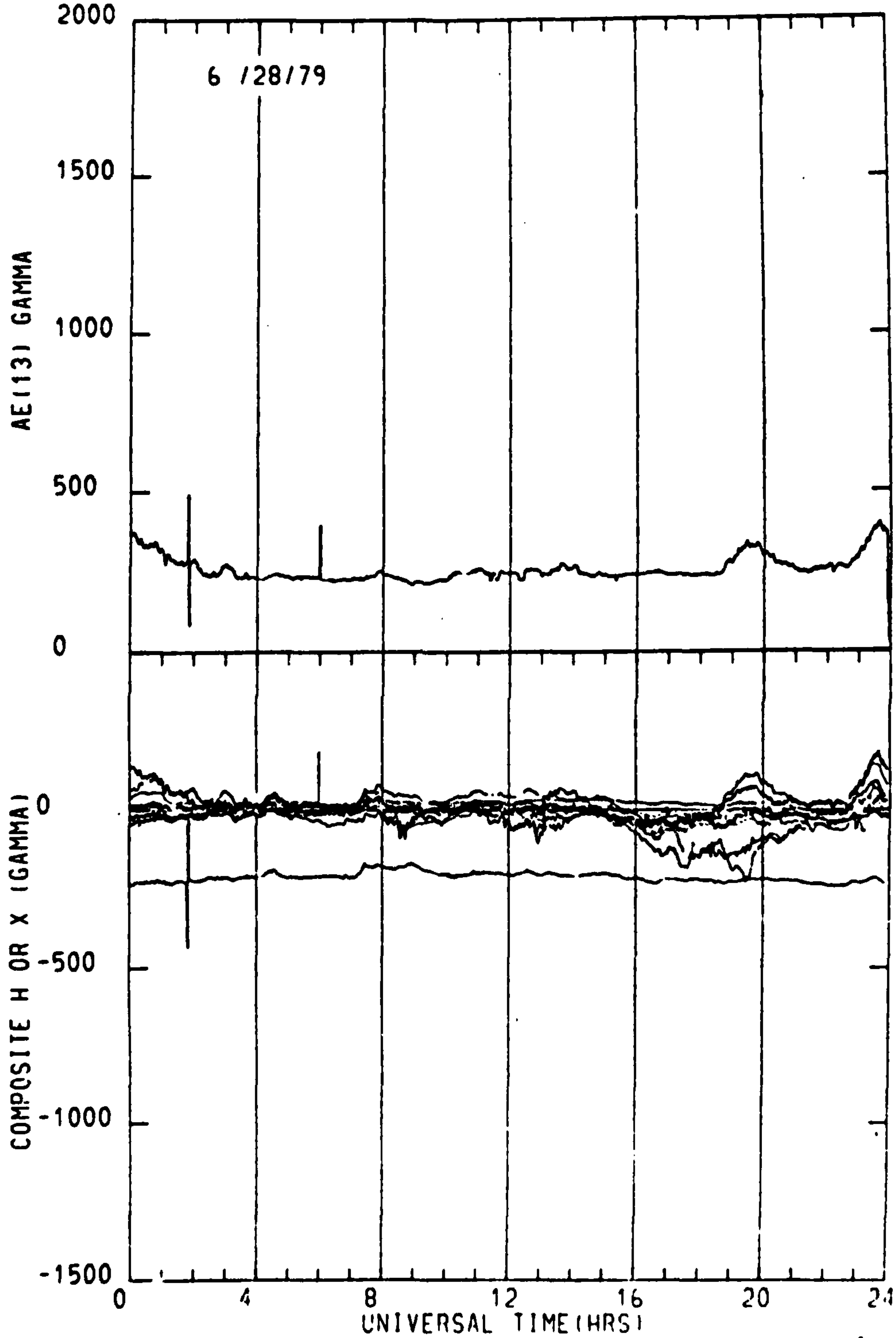
6 /23/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

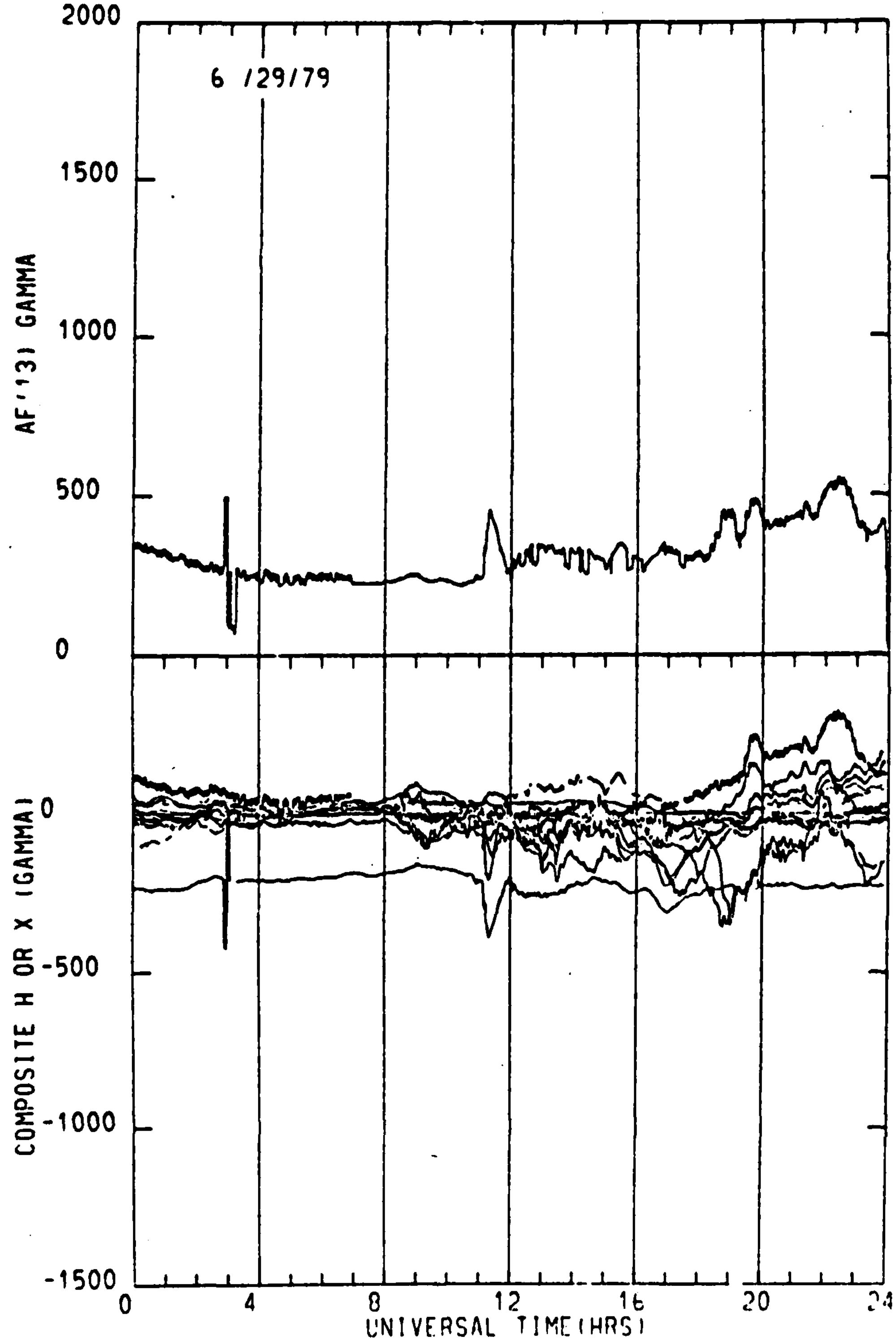

6 /24/79
2000
1500
1000
500
0
AE(12) GAMMA
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

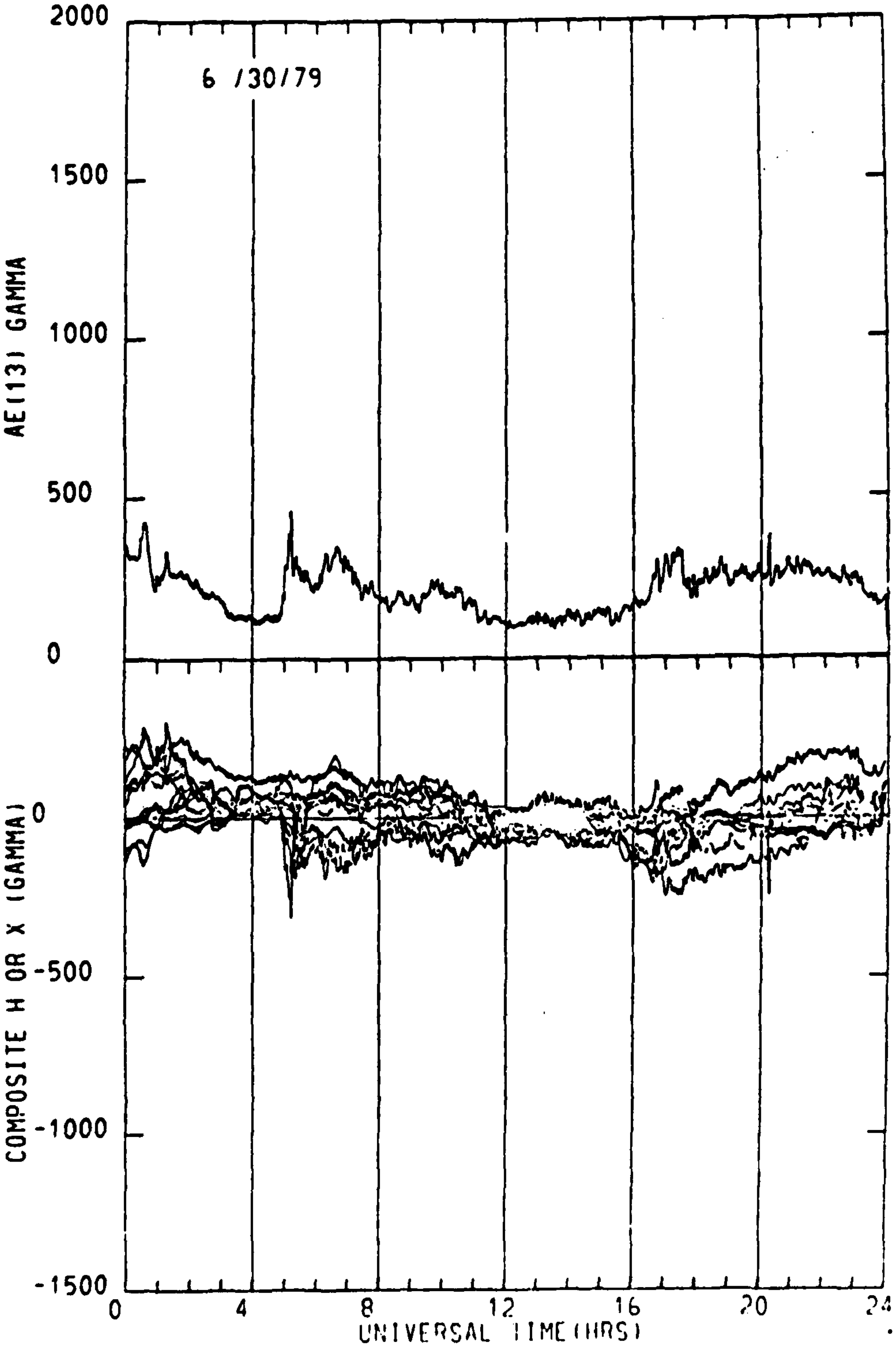

6 /25/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

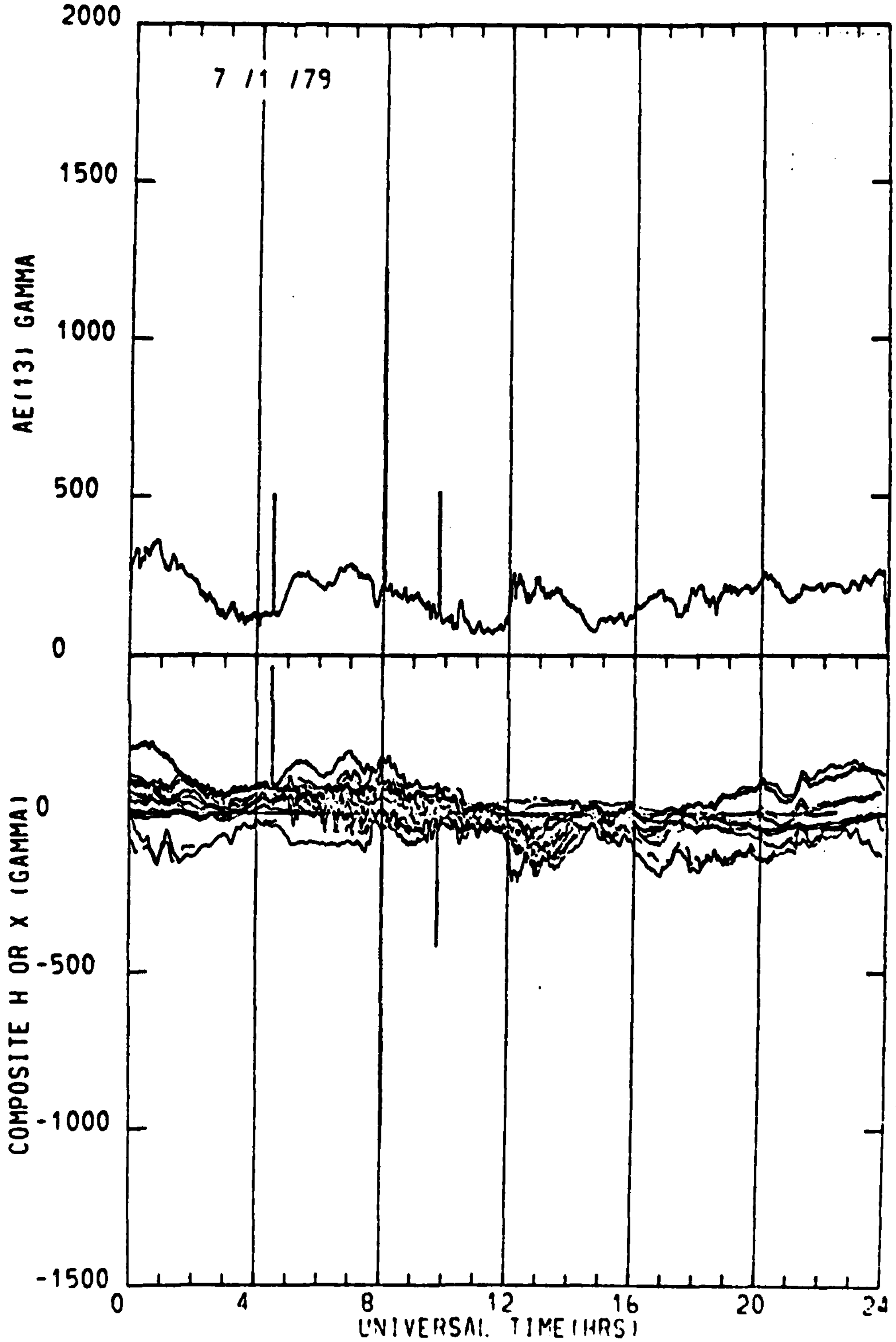

6 /26/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


6 /27/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR Y (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

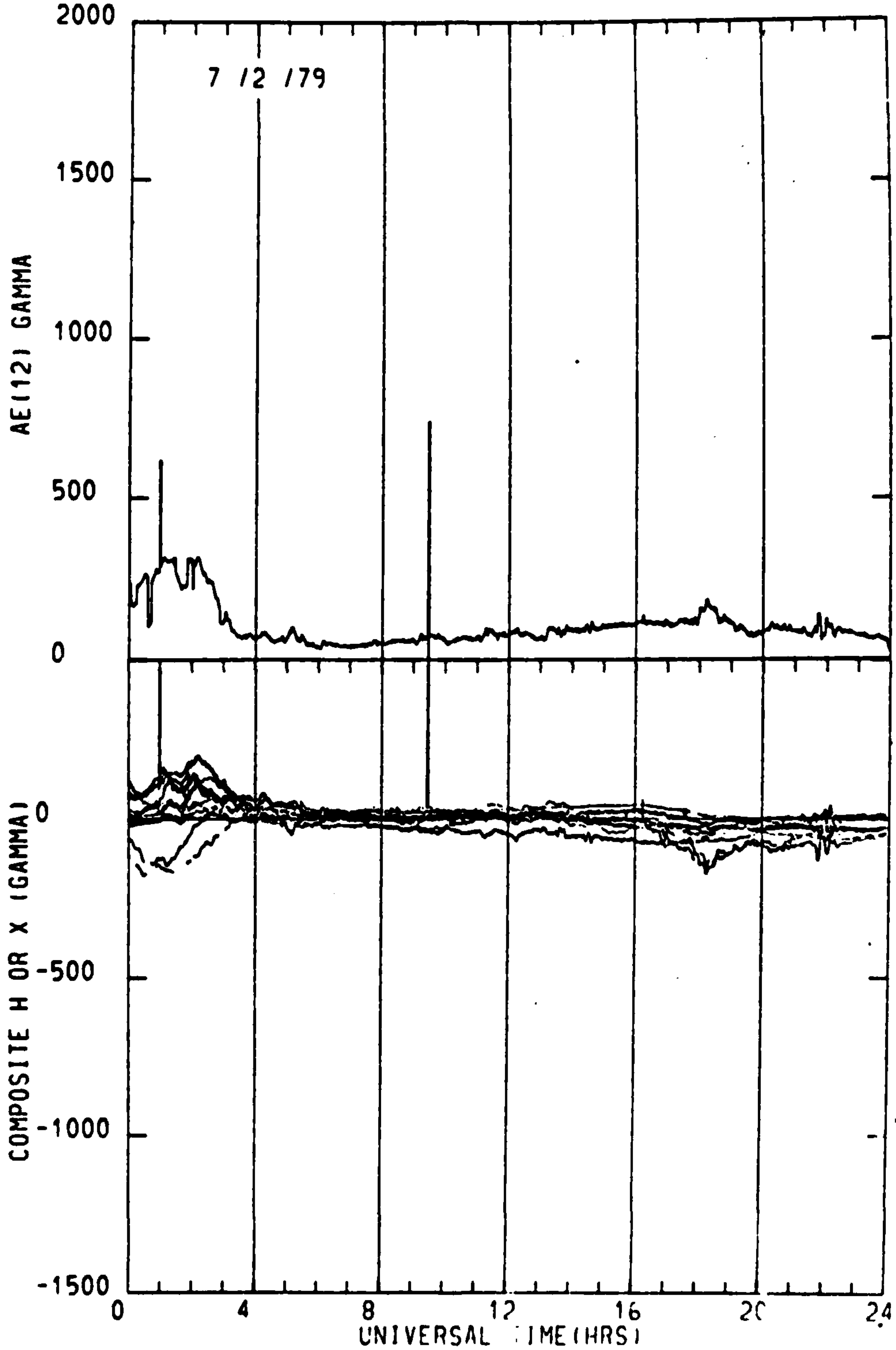

2000
6 /28/79
1500
AE(13) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


6 /29/79
2000
1500
1000
500
0
-500
-1000
-1500
AF'13) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

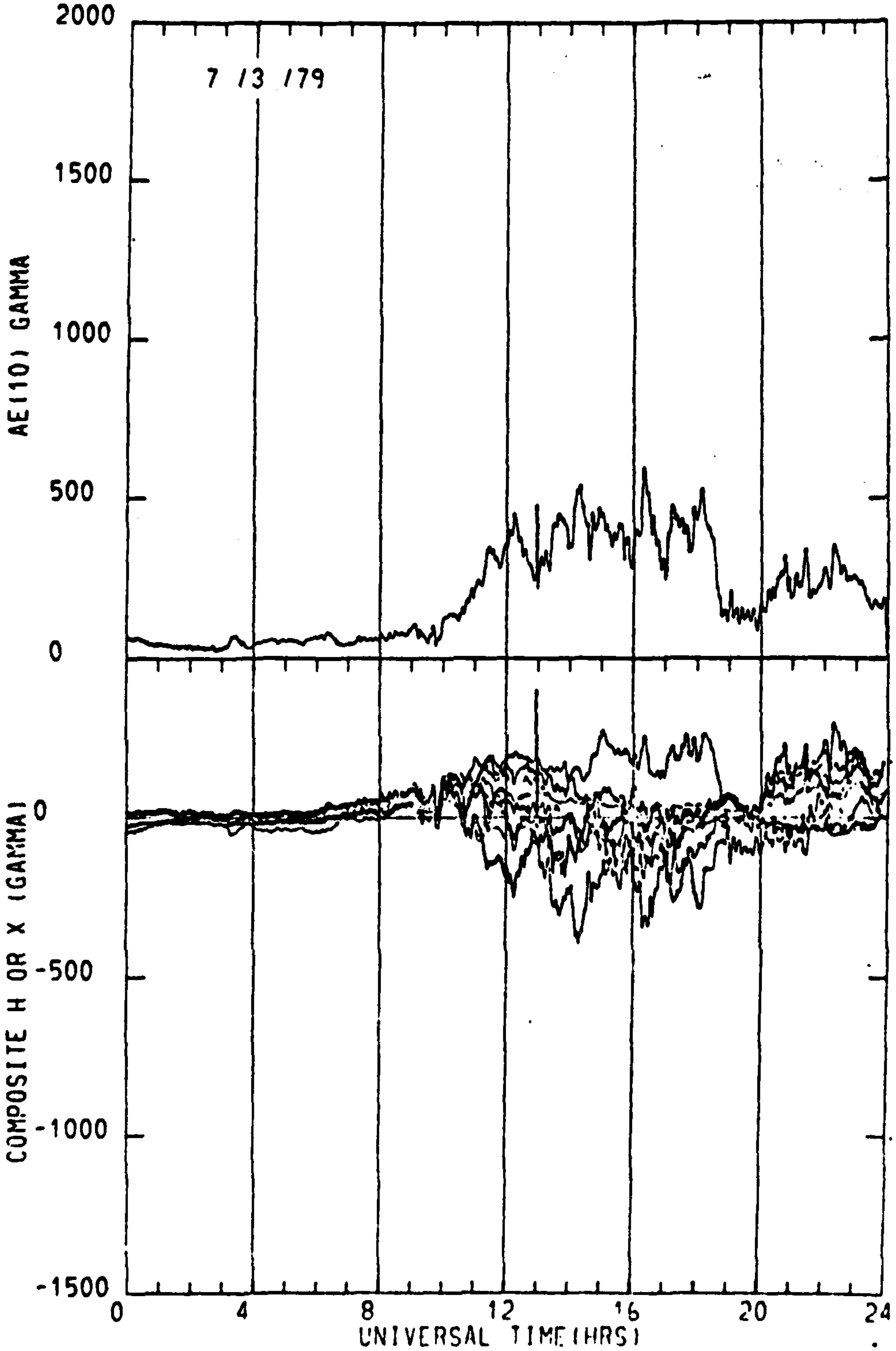

6 /30/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

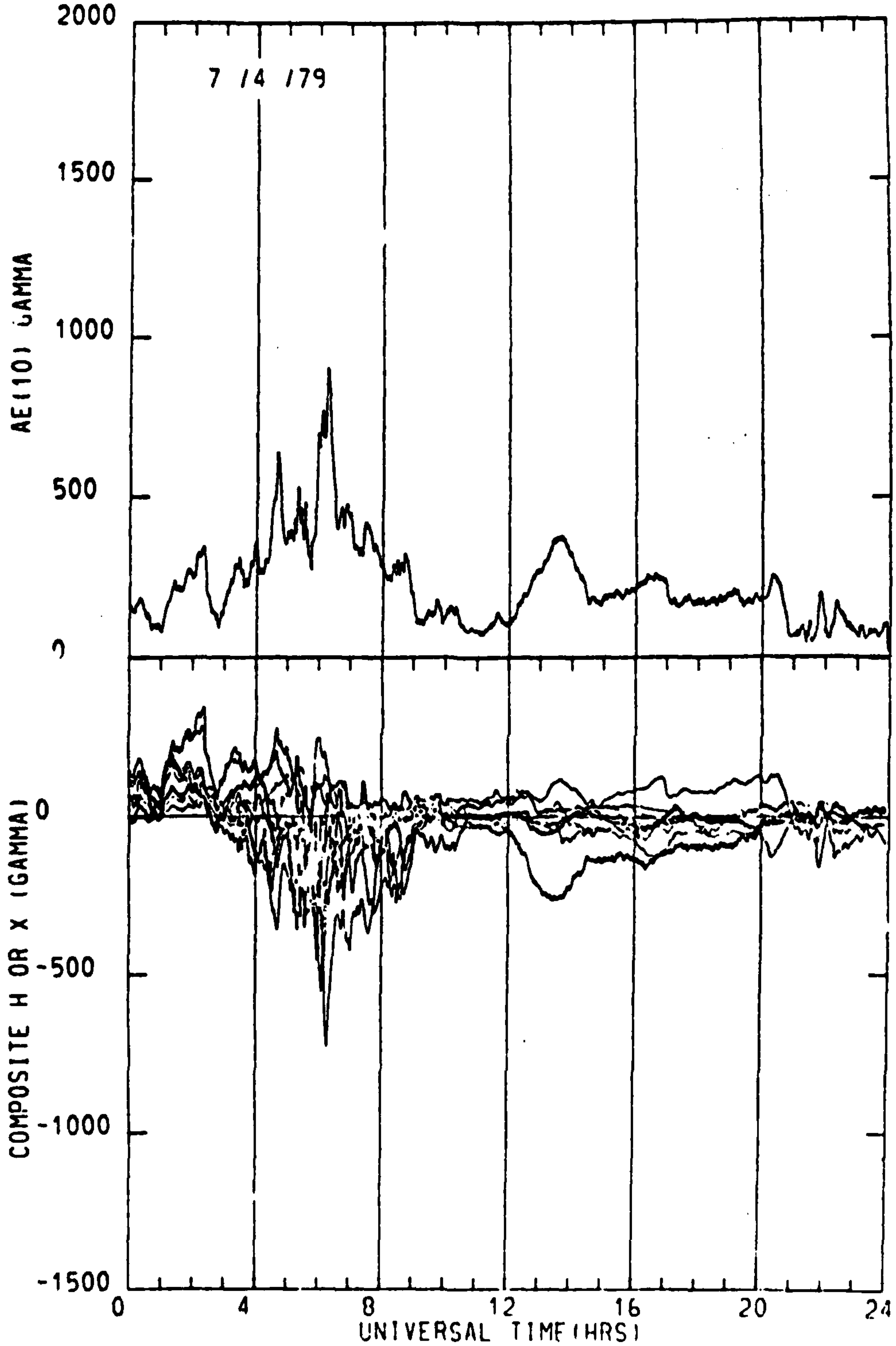


7 /1 /79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

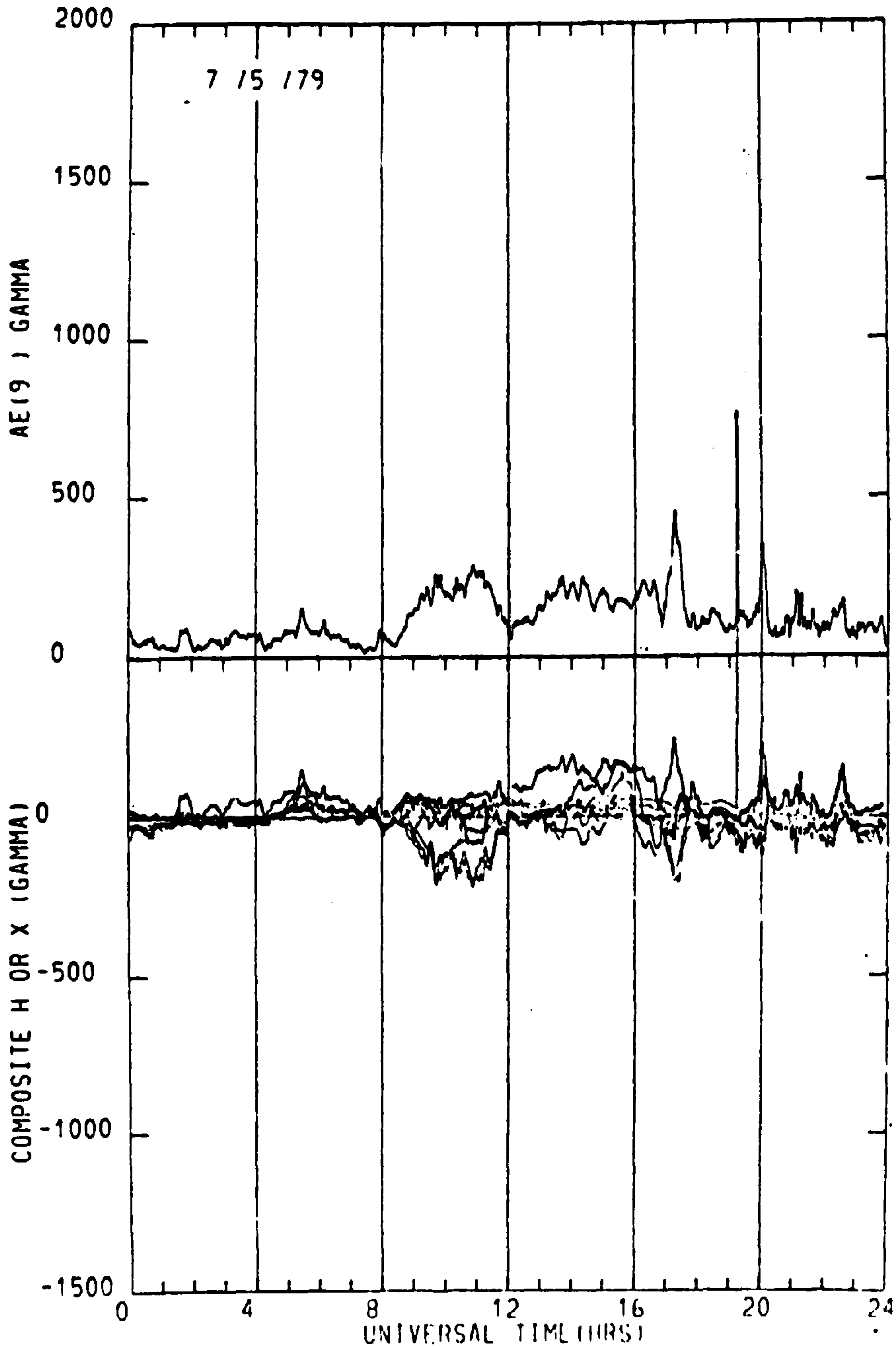


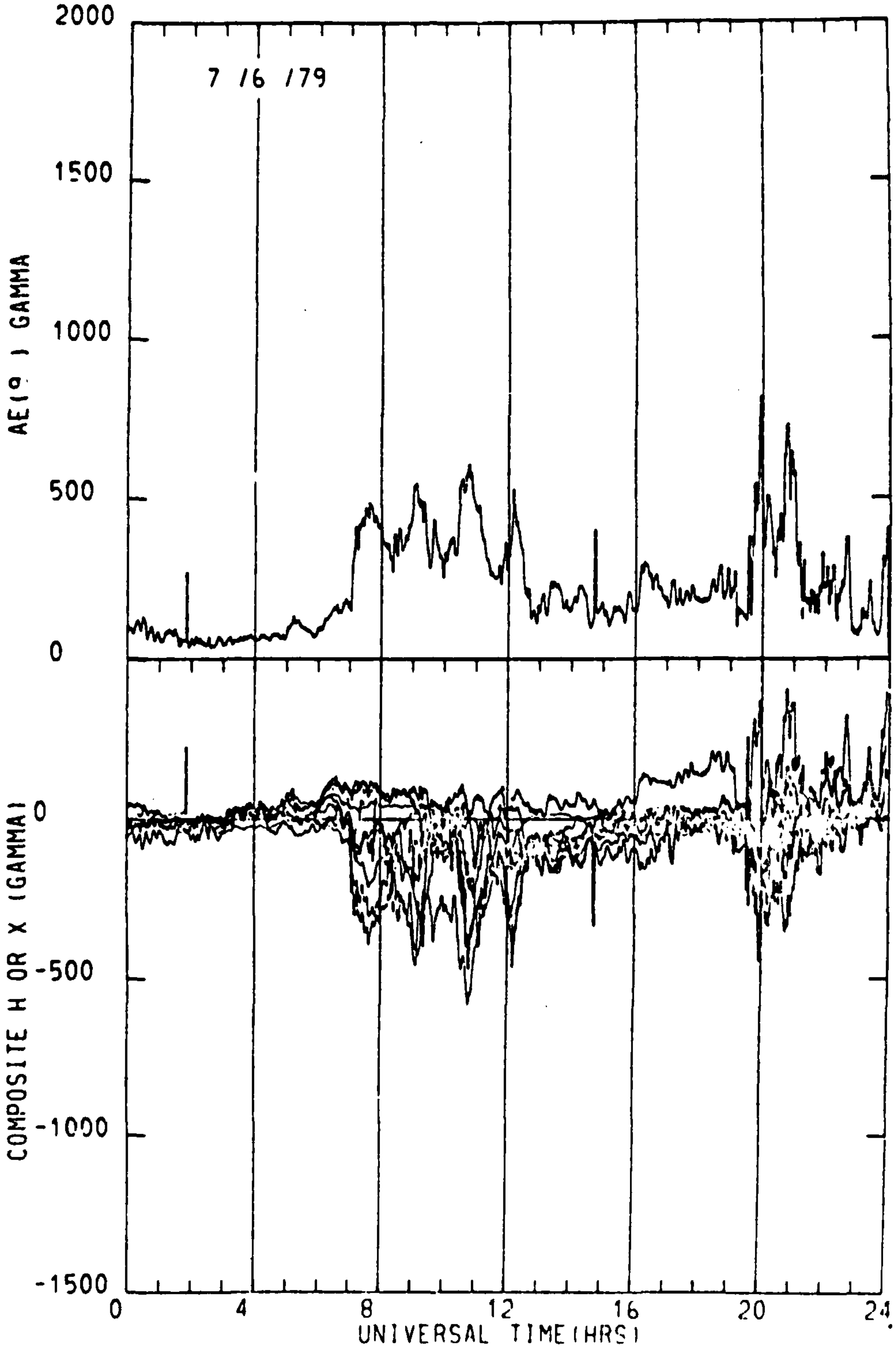
7 /2 /79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

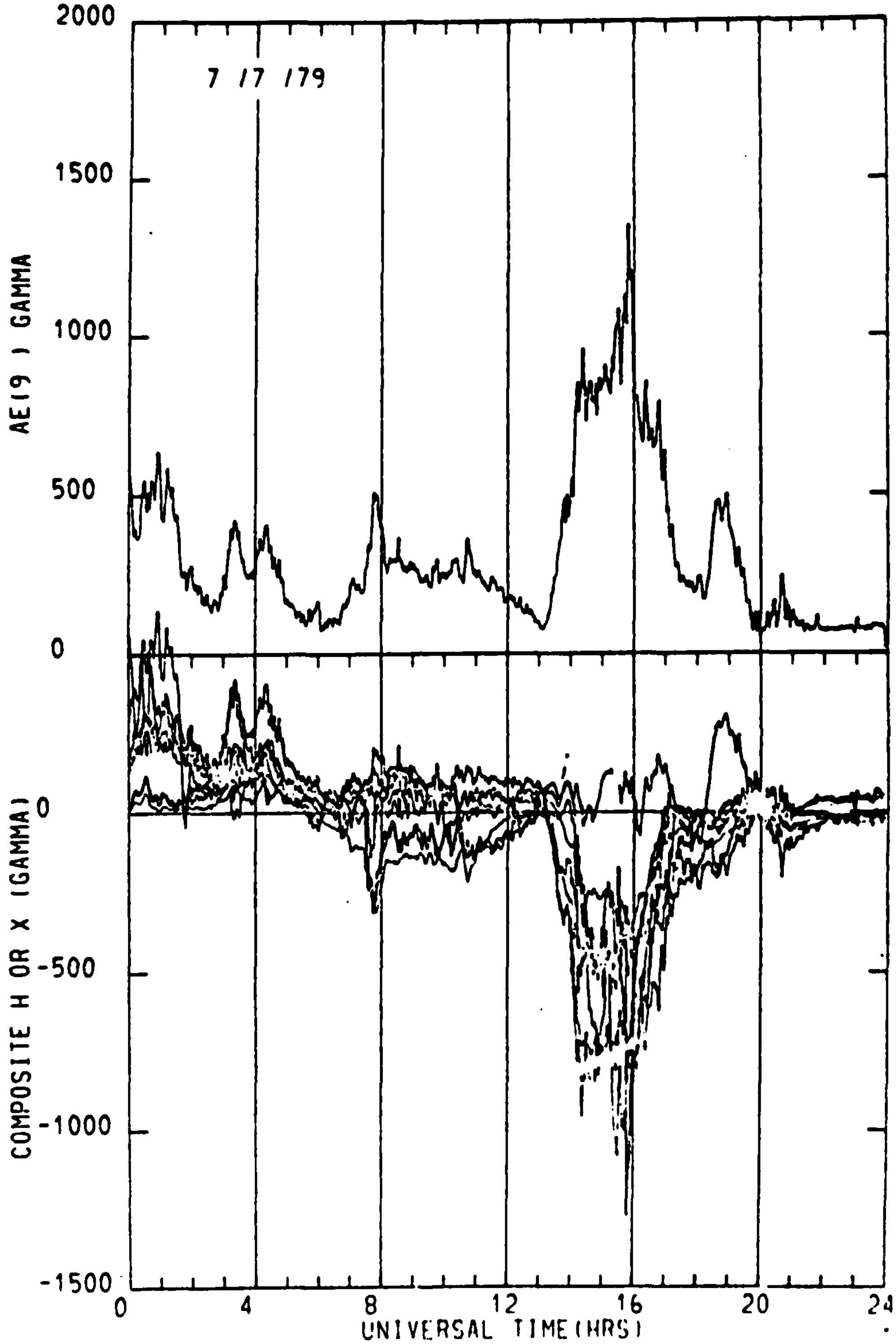

2000
7 /13 /79
1500
AE(10) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

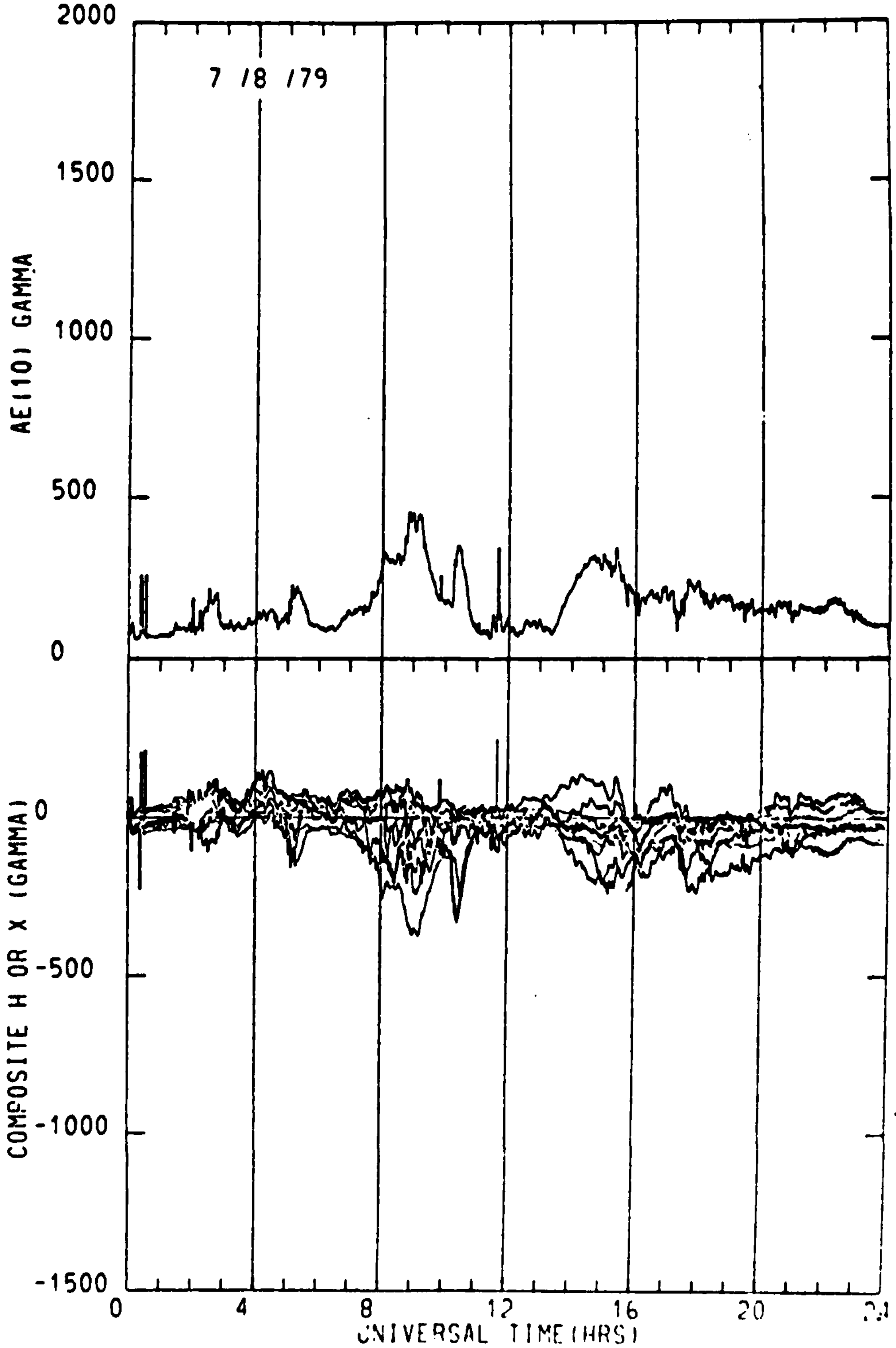


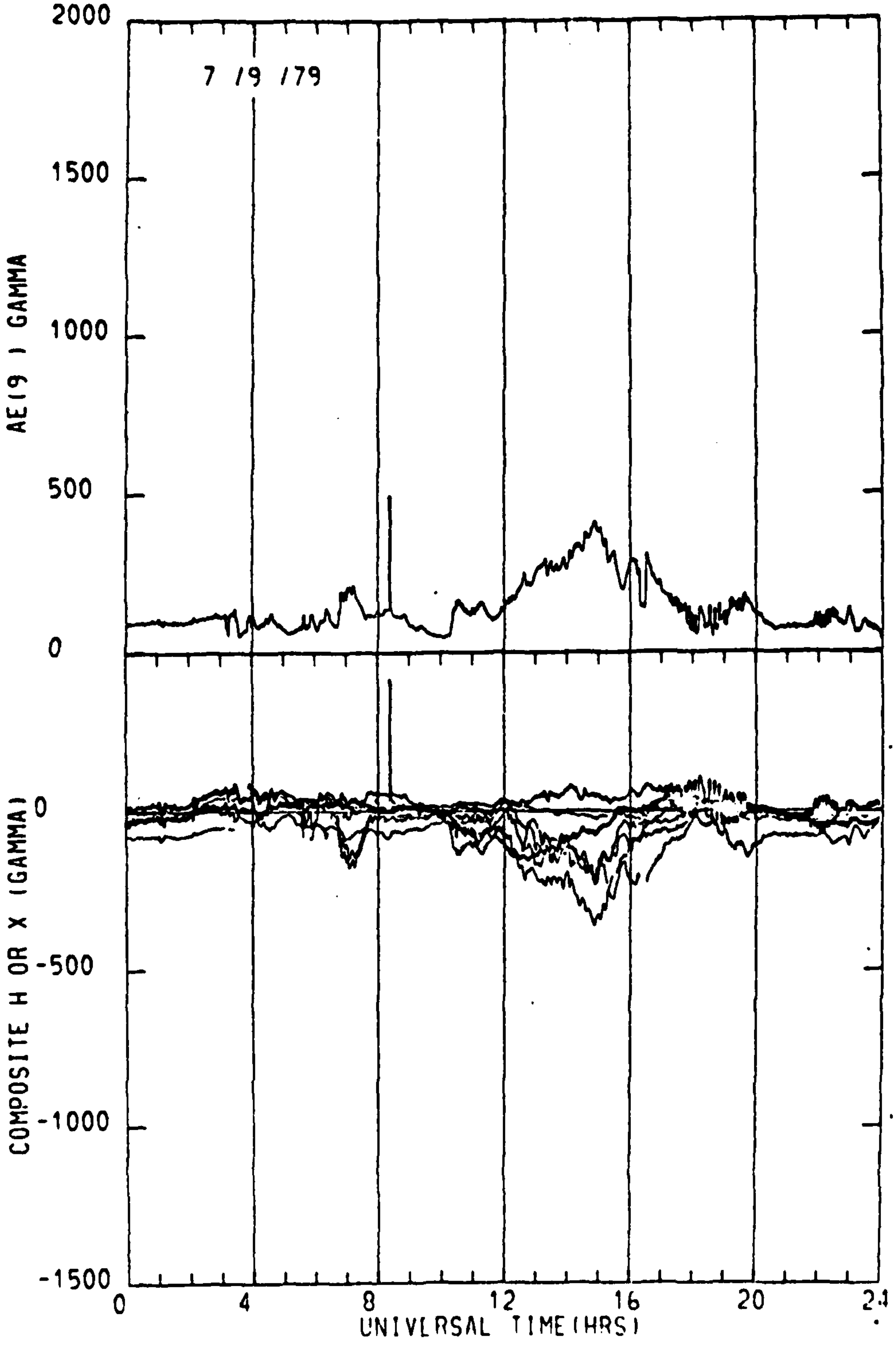
7 /4 /79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

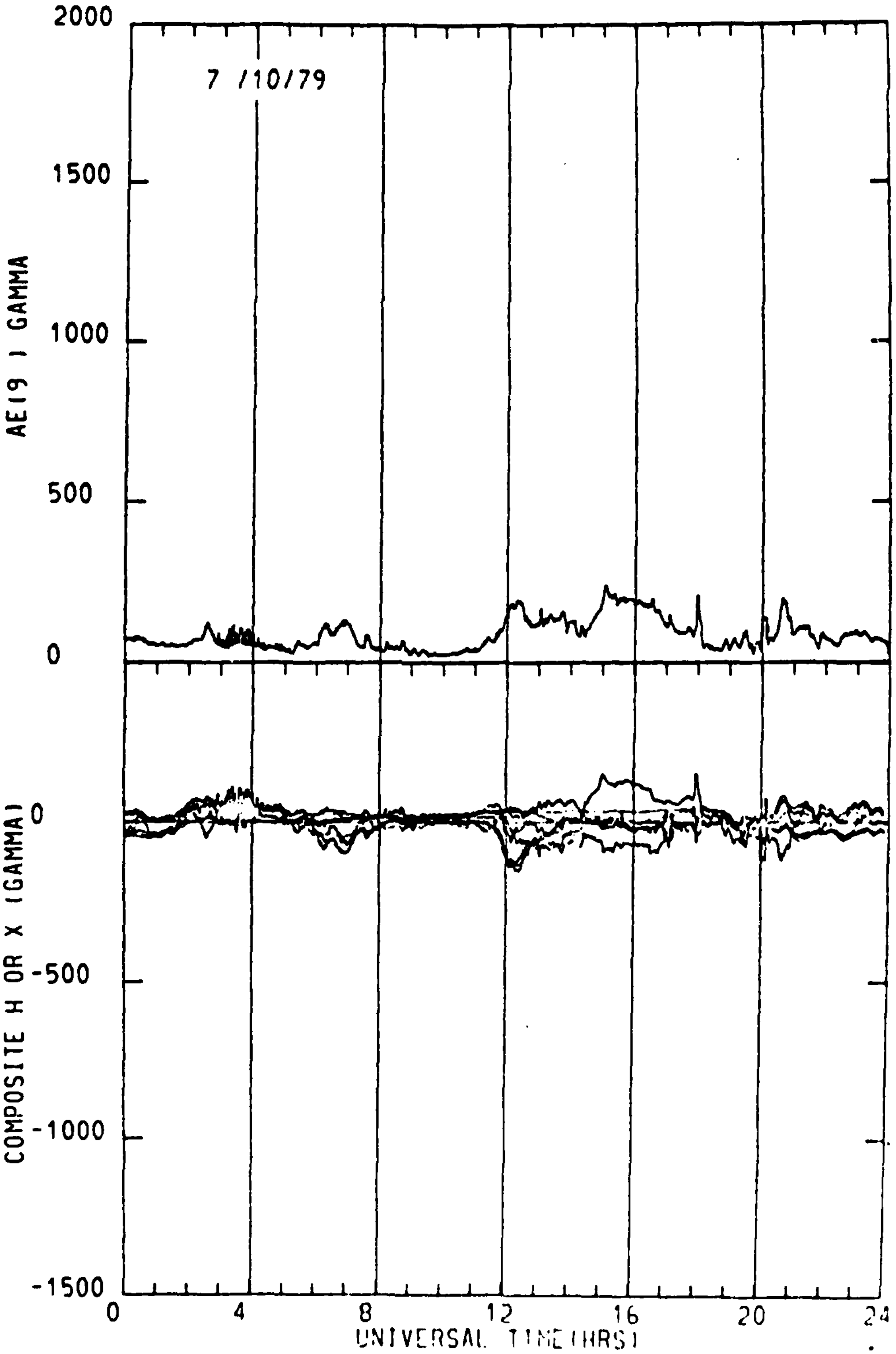

7 /5 /79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

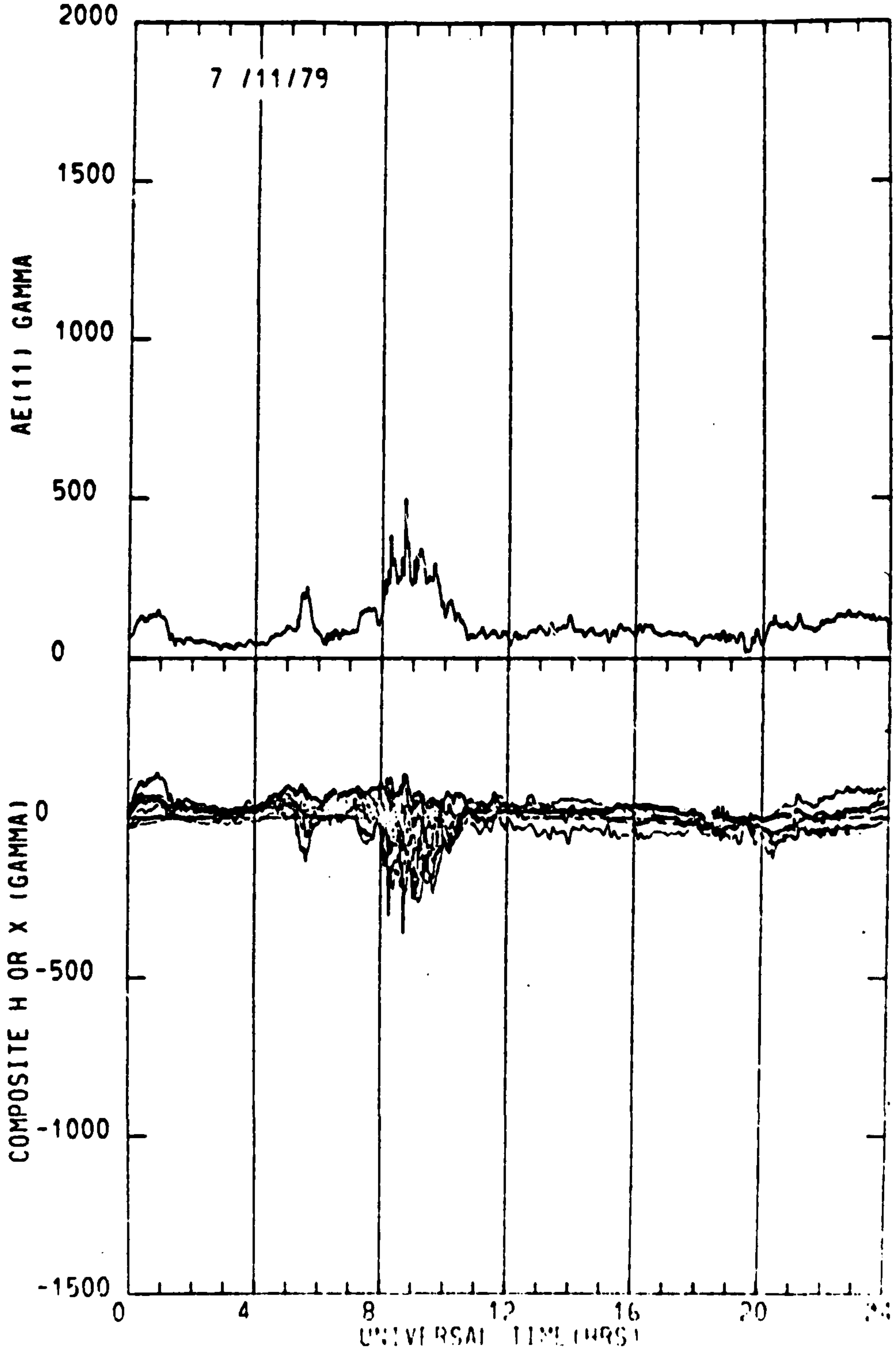

7 /6 /79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

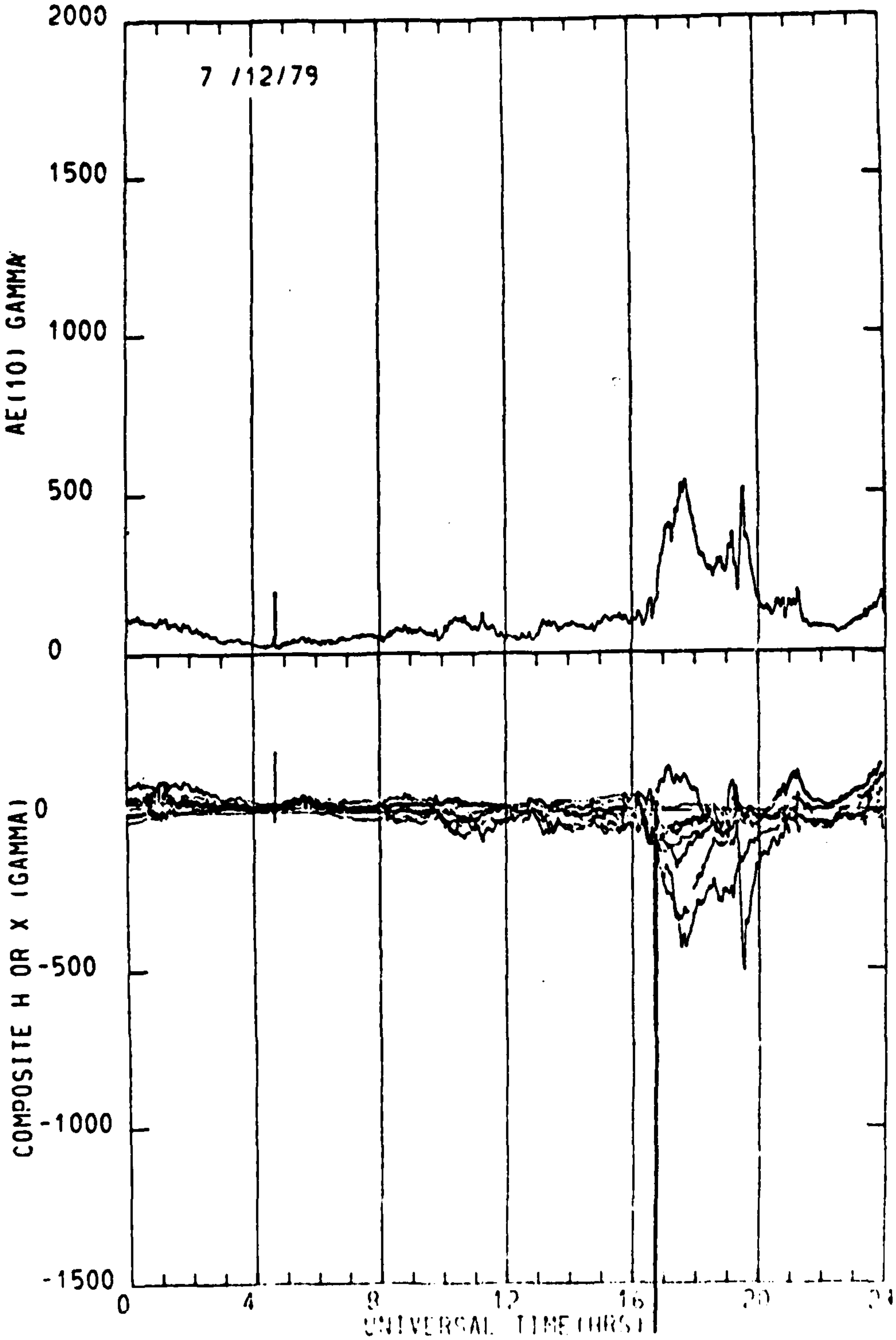

7 /17 /79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

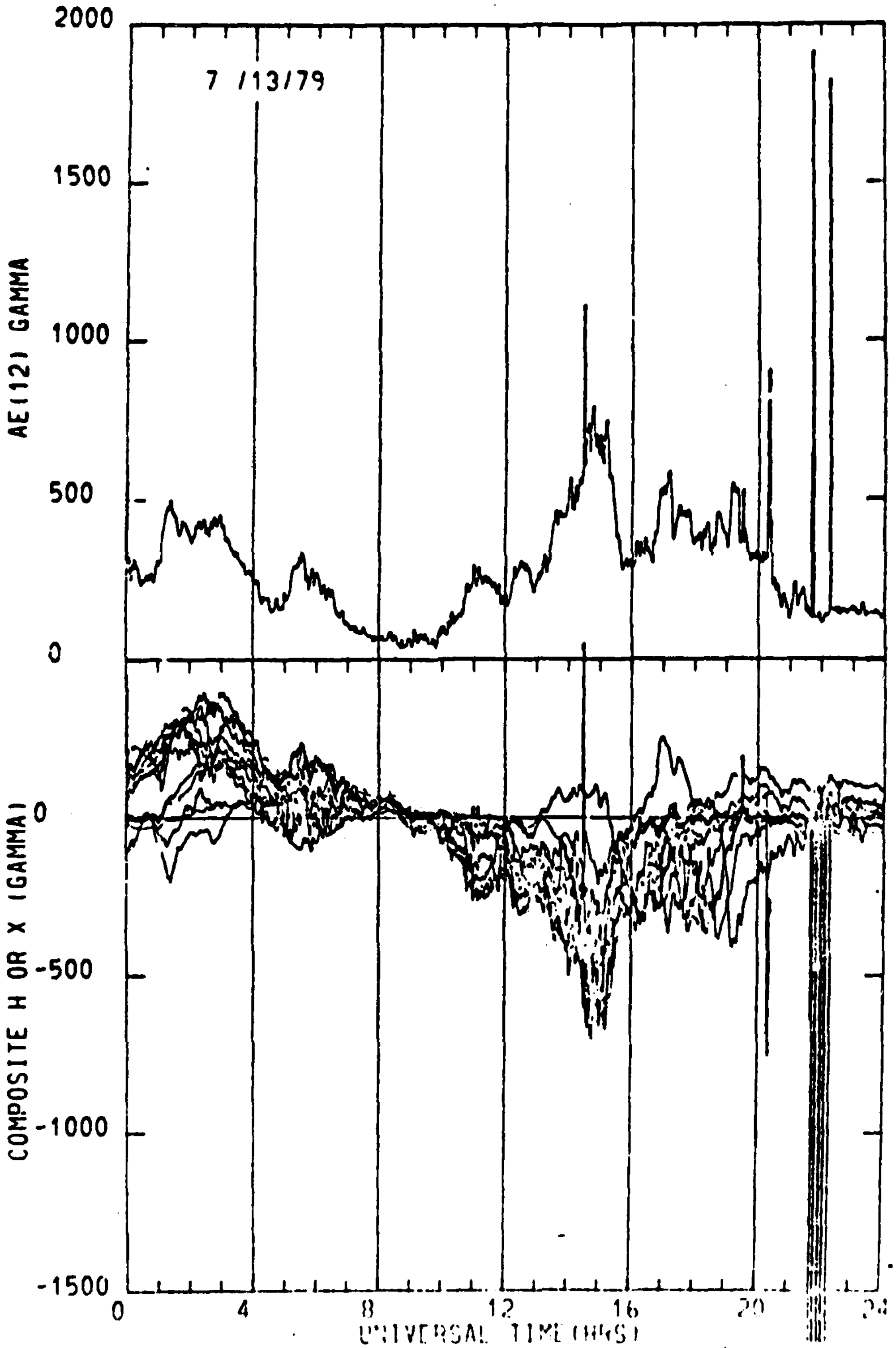

2000
1500
1000
500
0
7 /8 /79
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)


7 /19 /79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

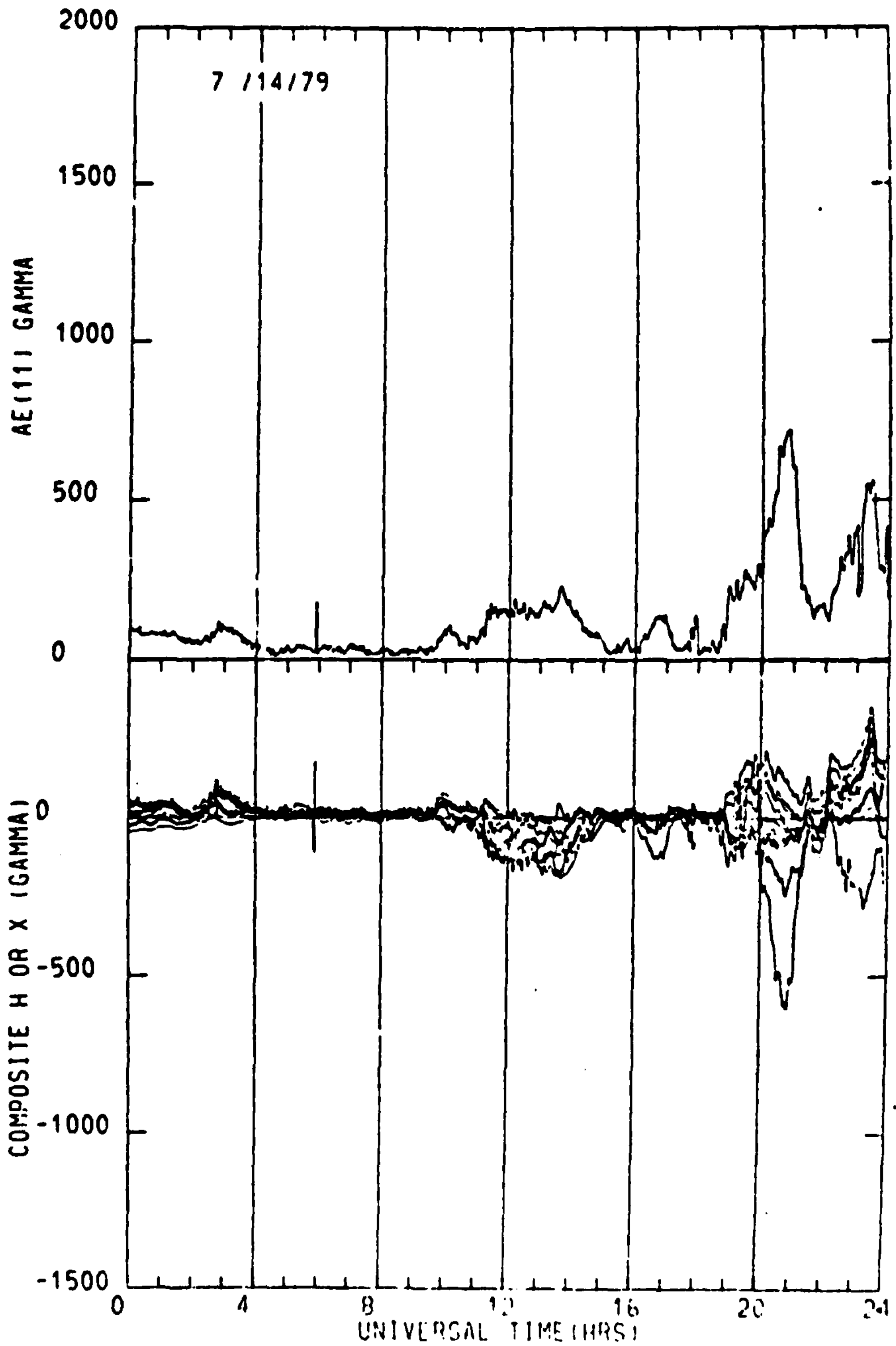

7 /10/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


7 /11/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

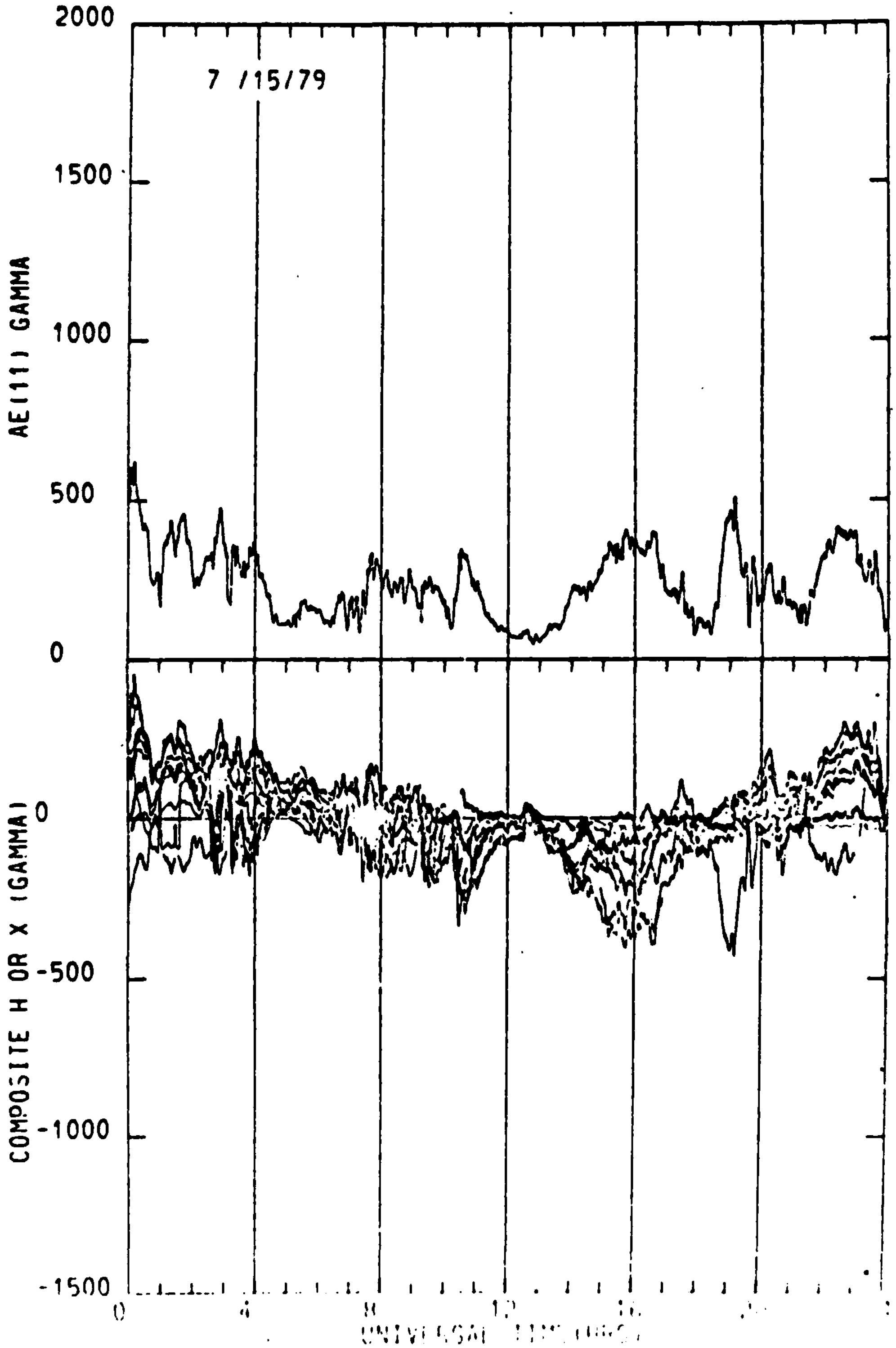

7 /12/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

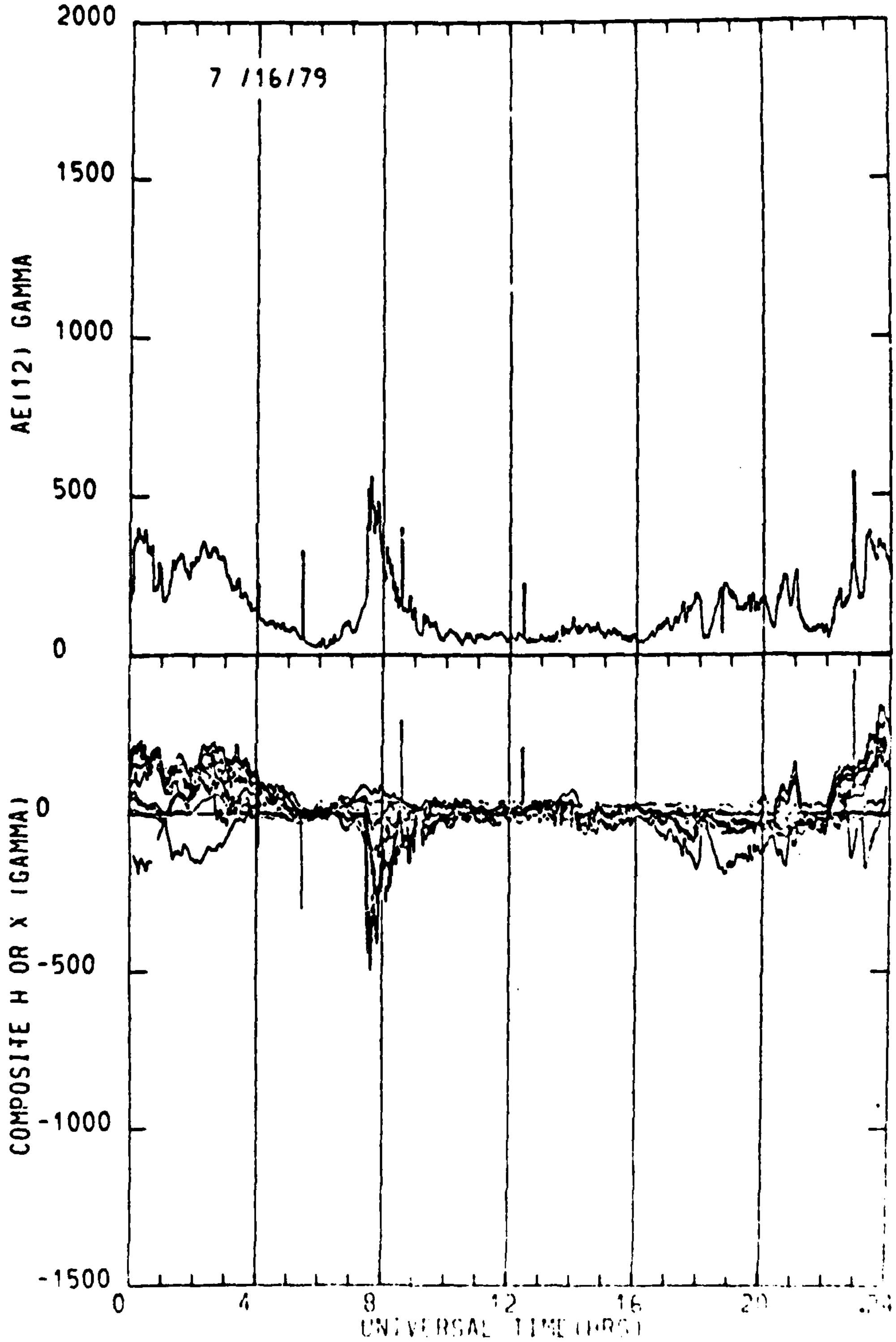


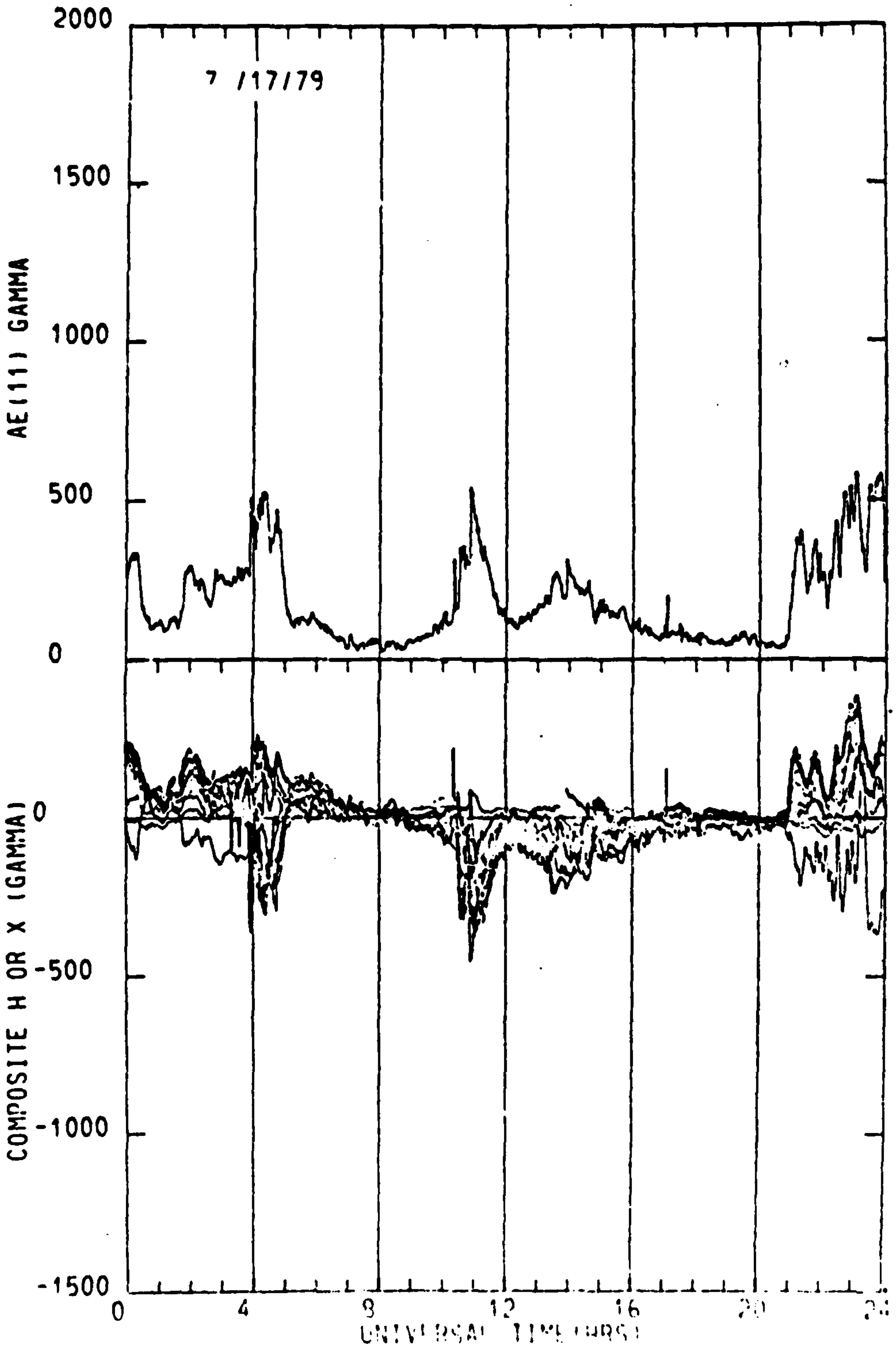
7 /13/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



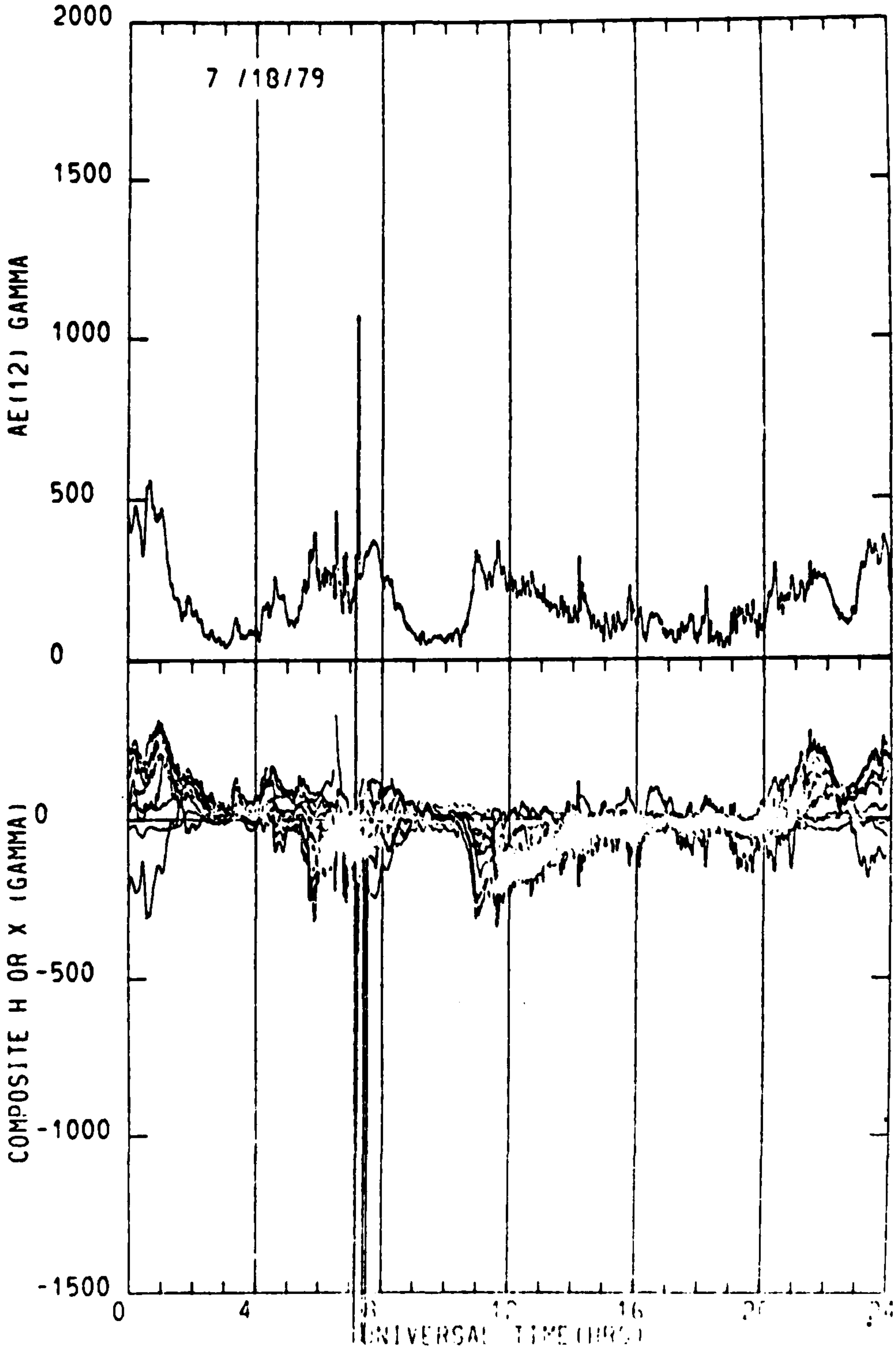
7 /14/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
16
UNIVERSAL TIME(HRS)


7 /15/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24

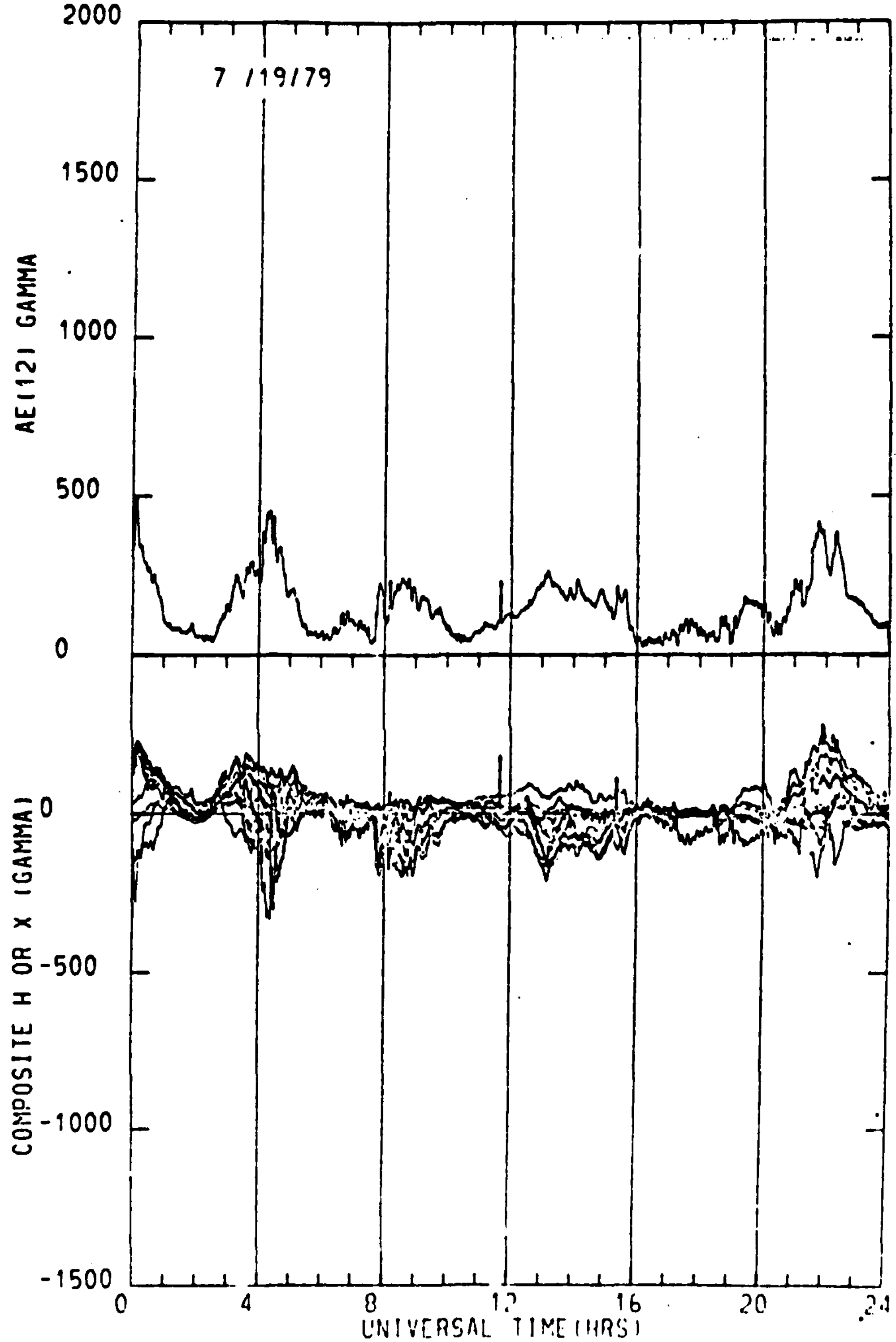

7 /16/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)



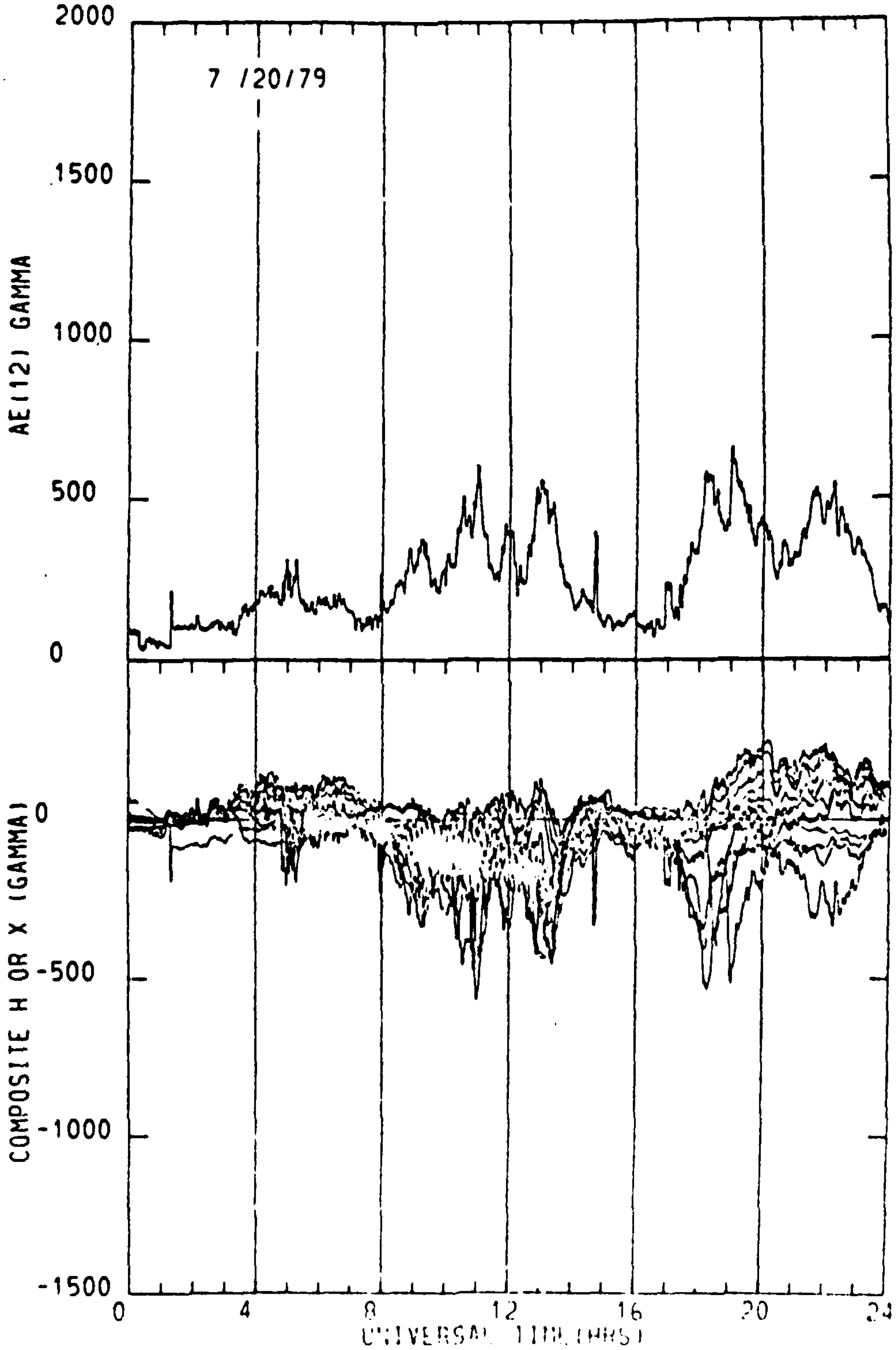
7 /17/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

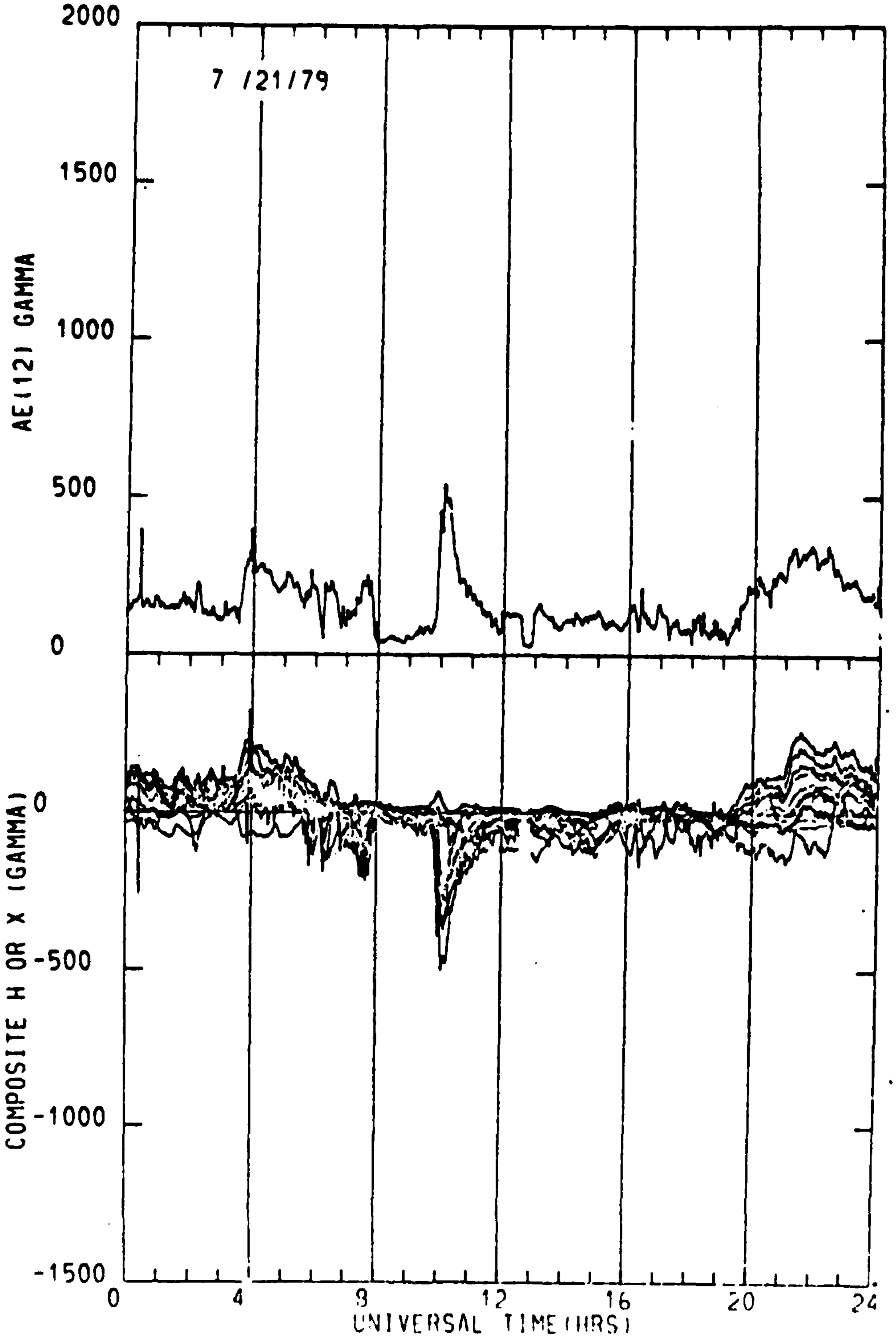


7 /18/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
16
UNIVERSAL TIME(HRS)

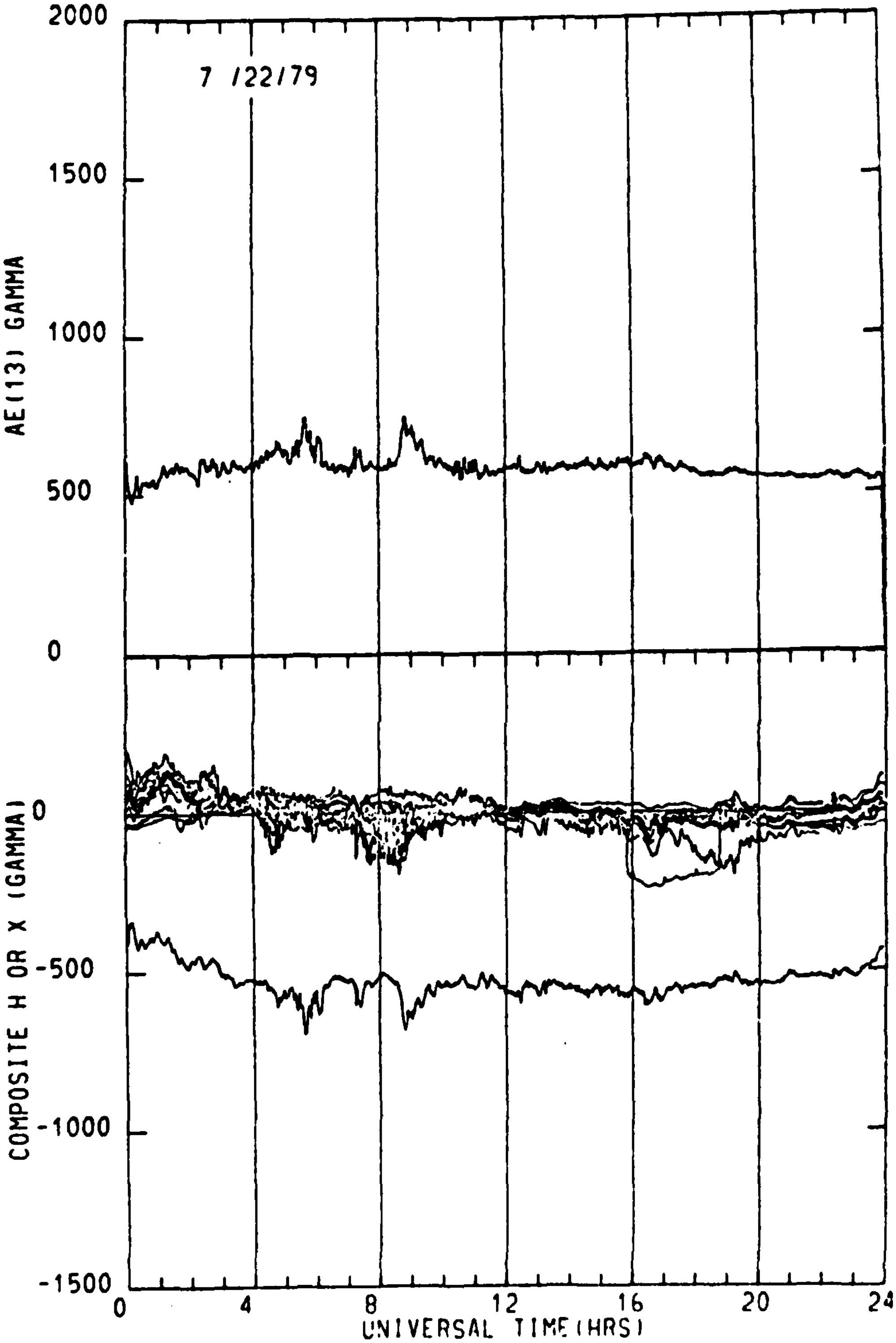


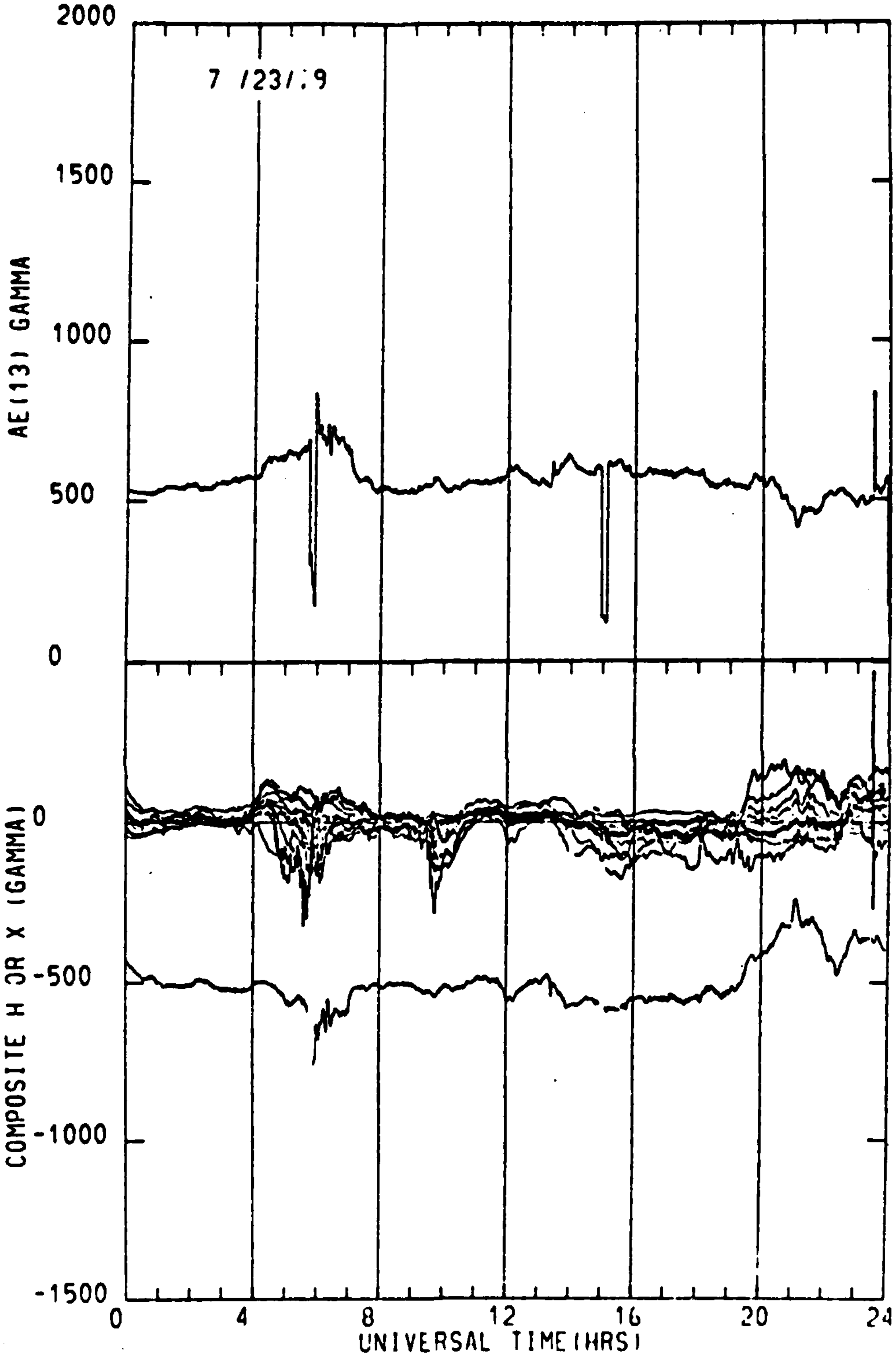
7 /19/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


7 /20/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

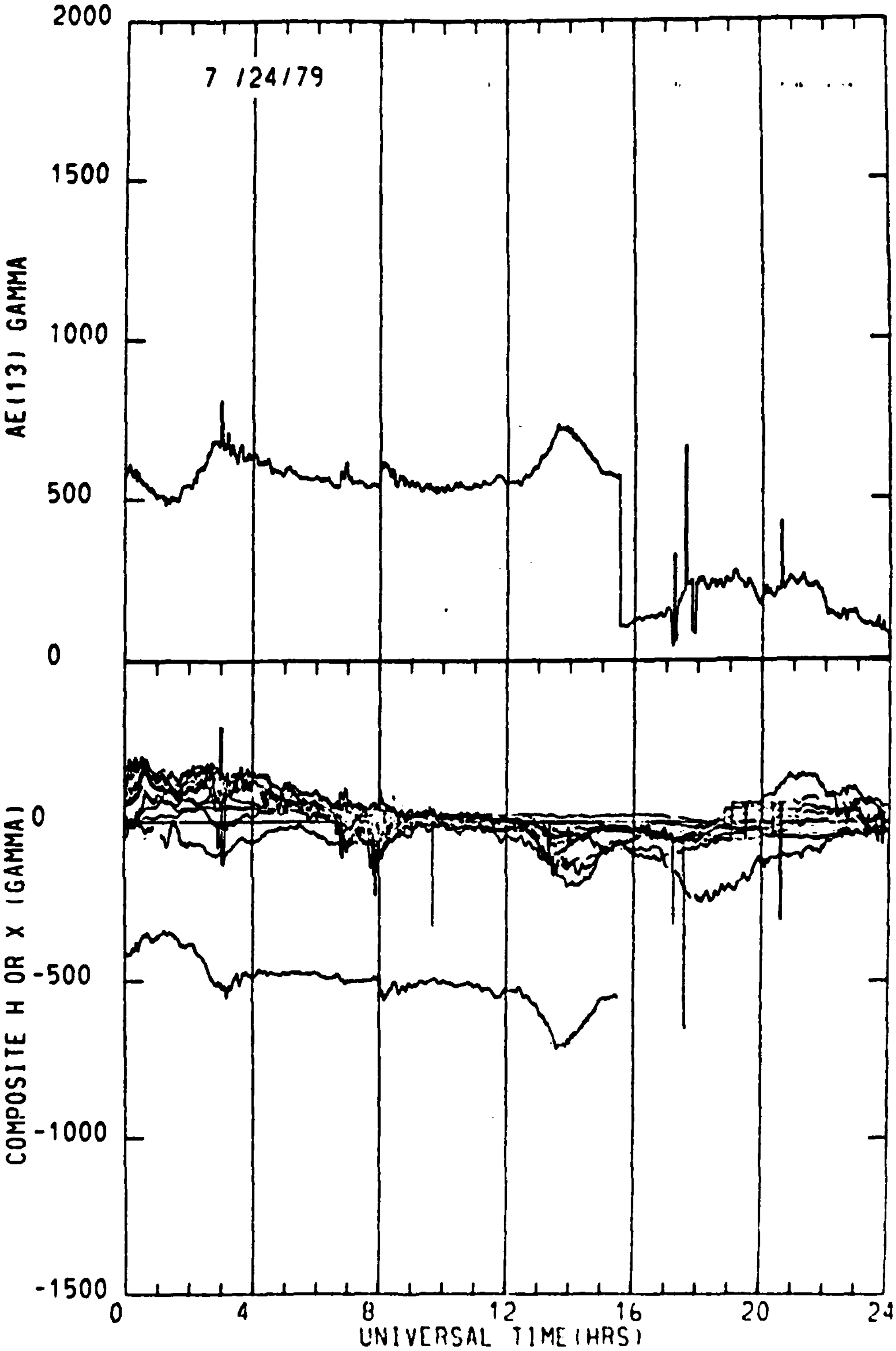


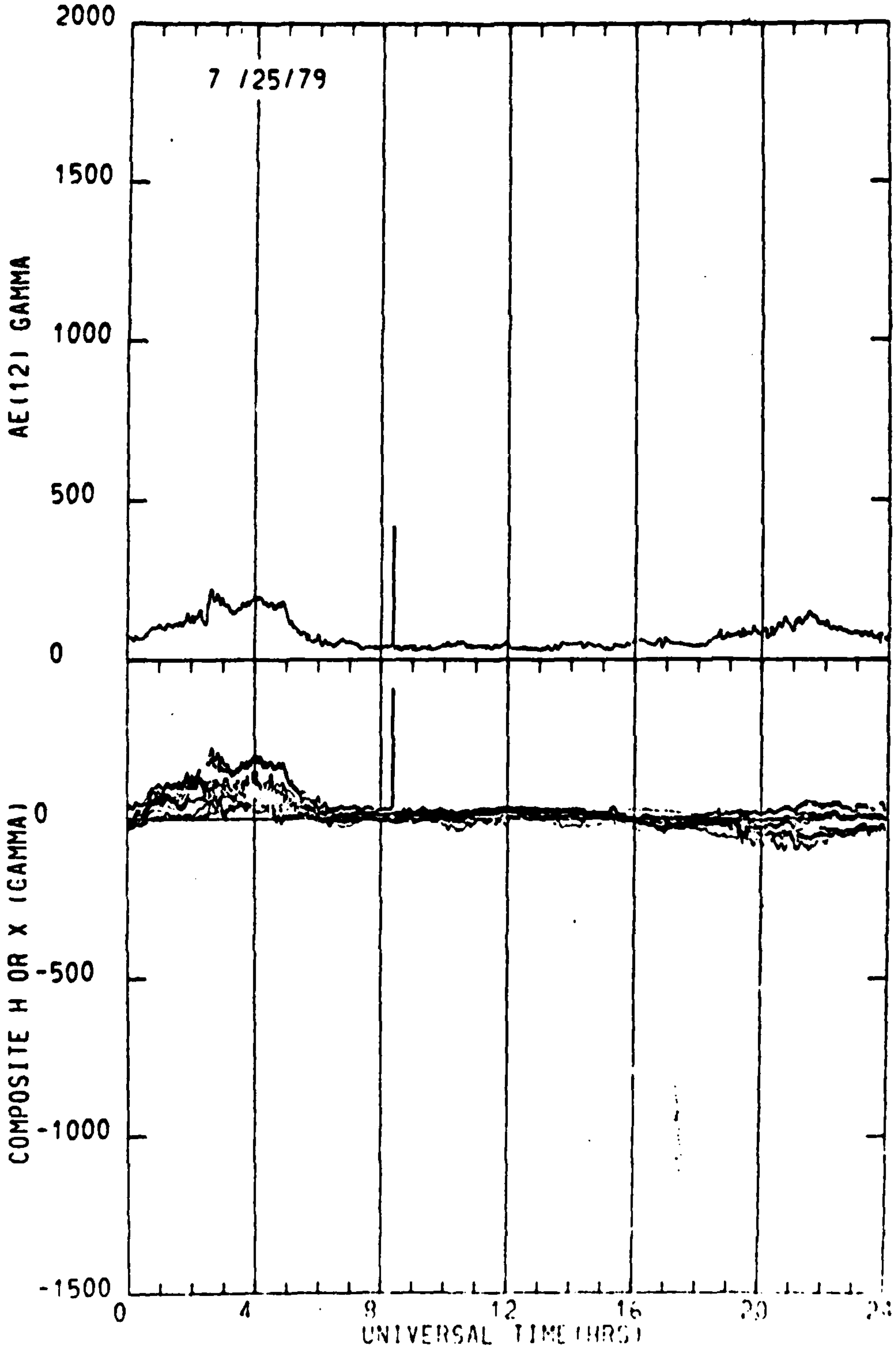
7 /21/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

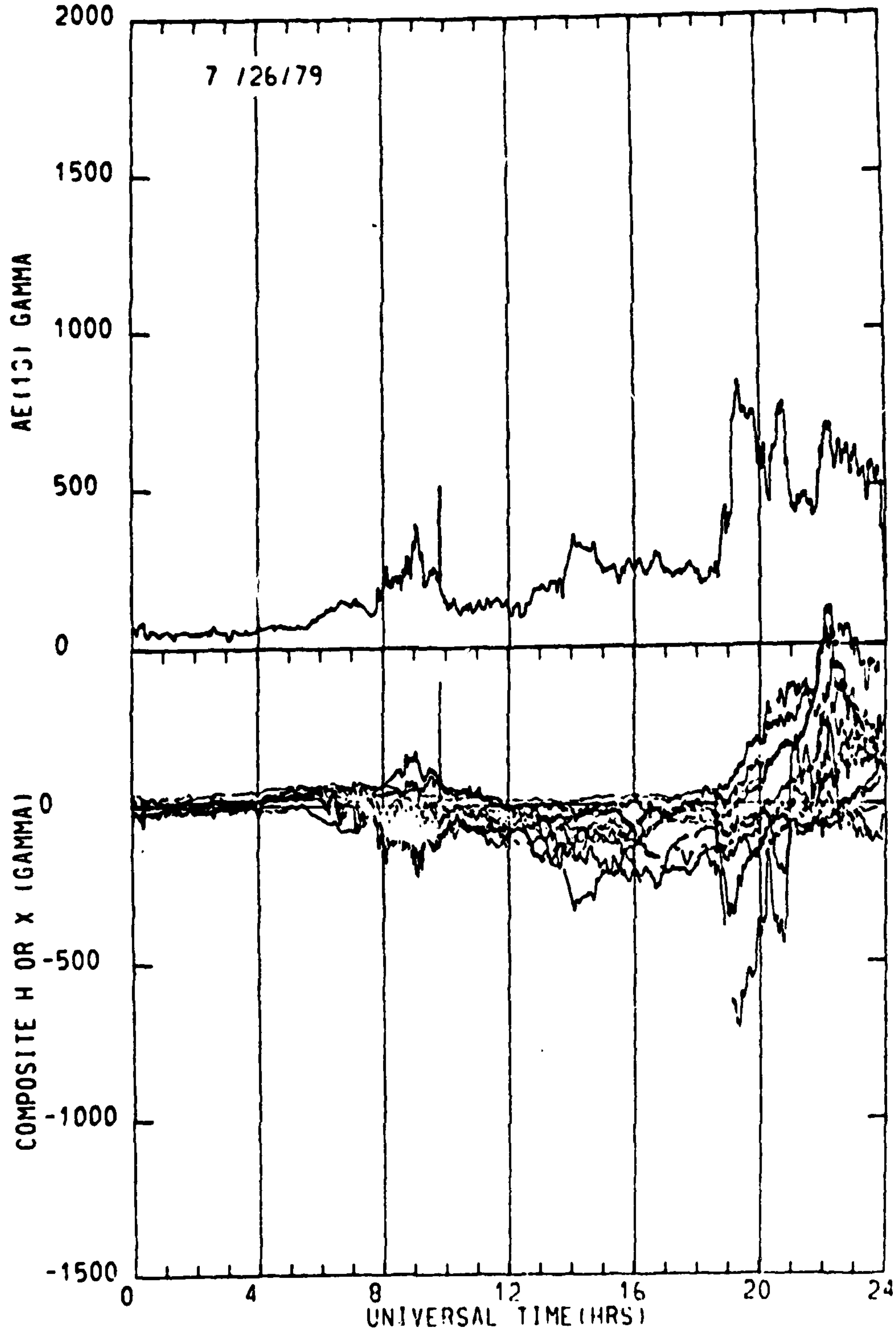

7 /22/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

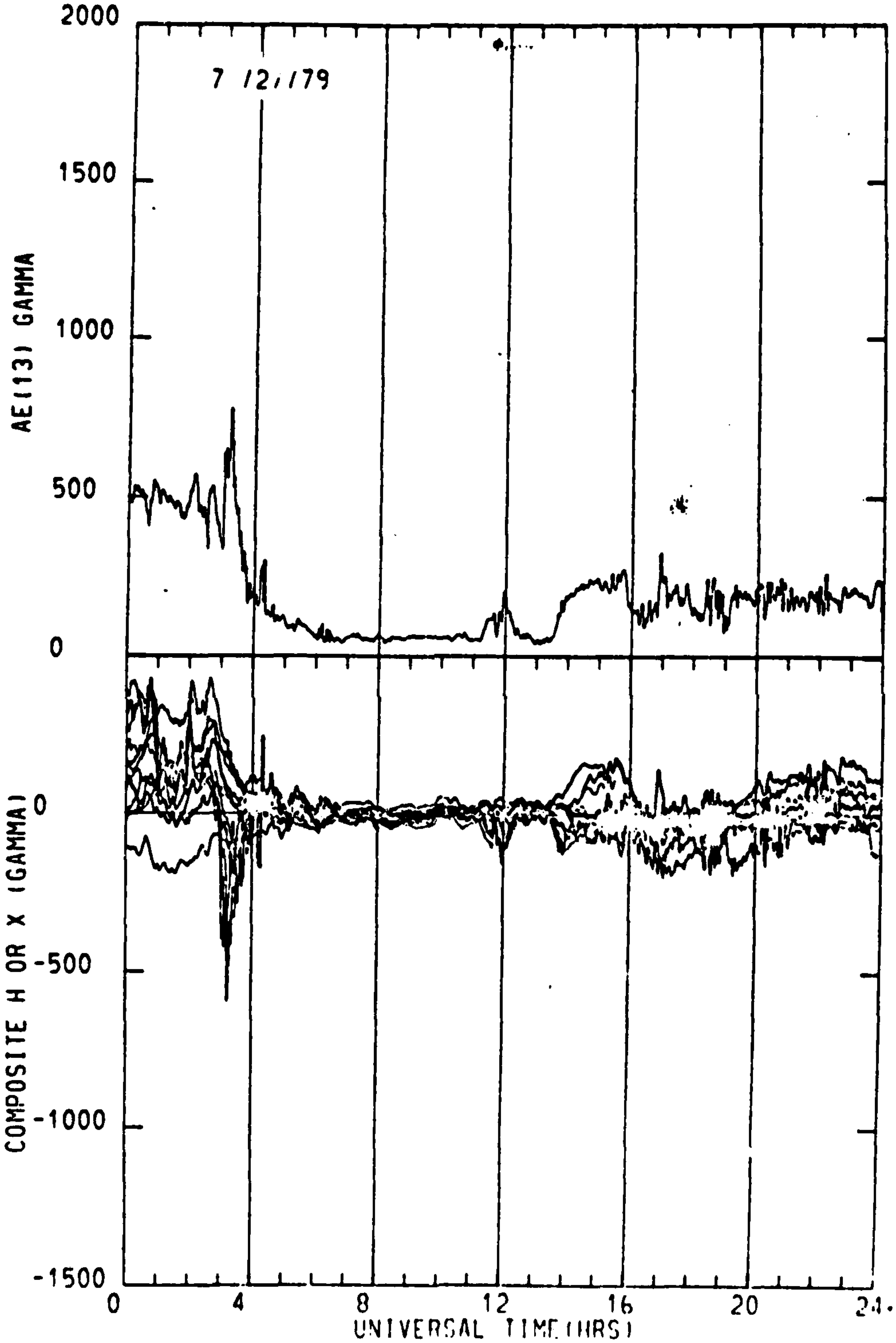


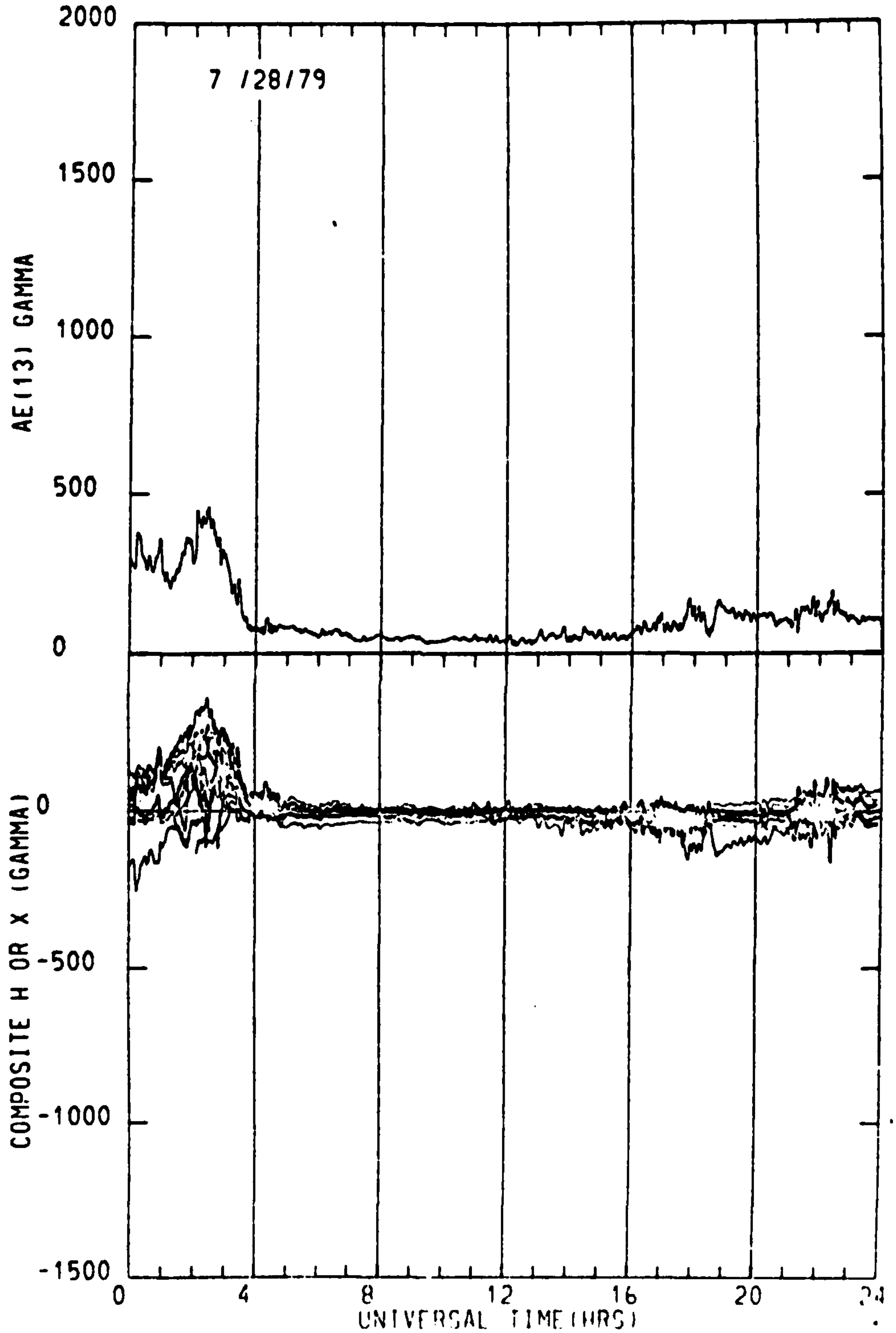
7 /23/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

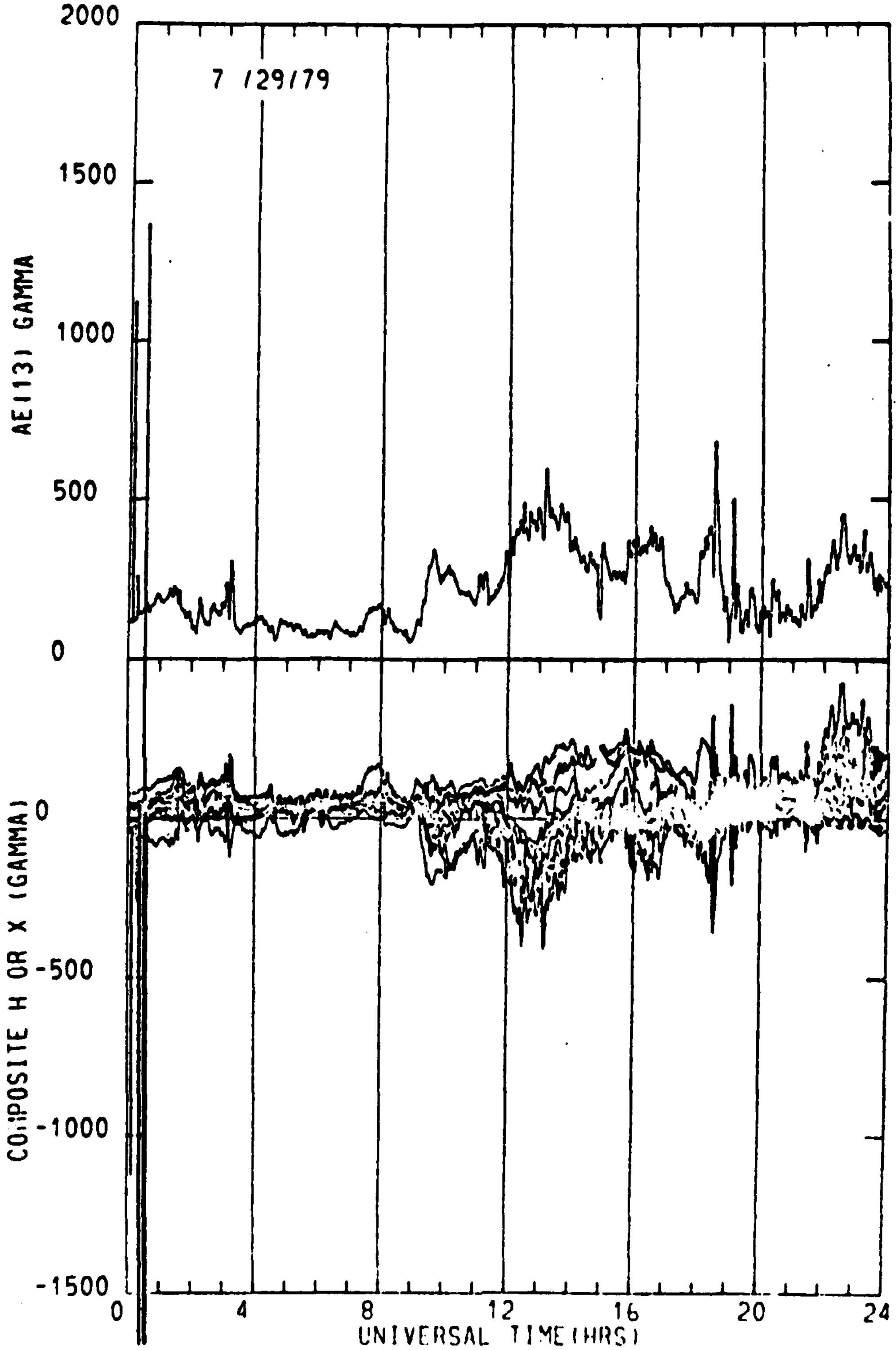

7 /24/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


7 /25/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

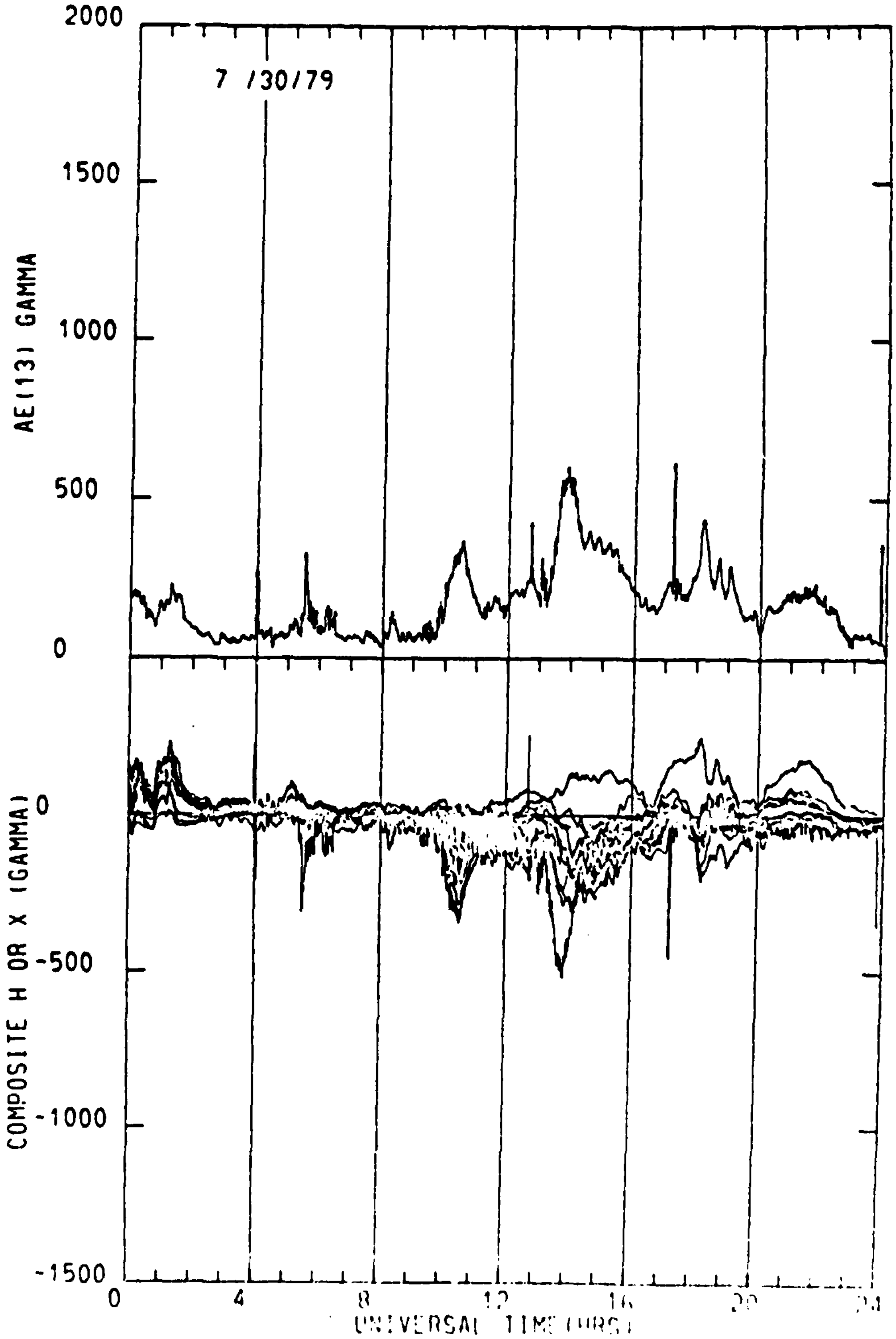

7 /26/79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

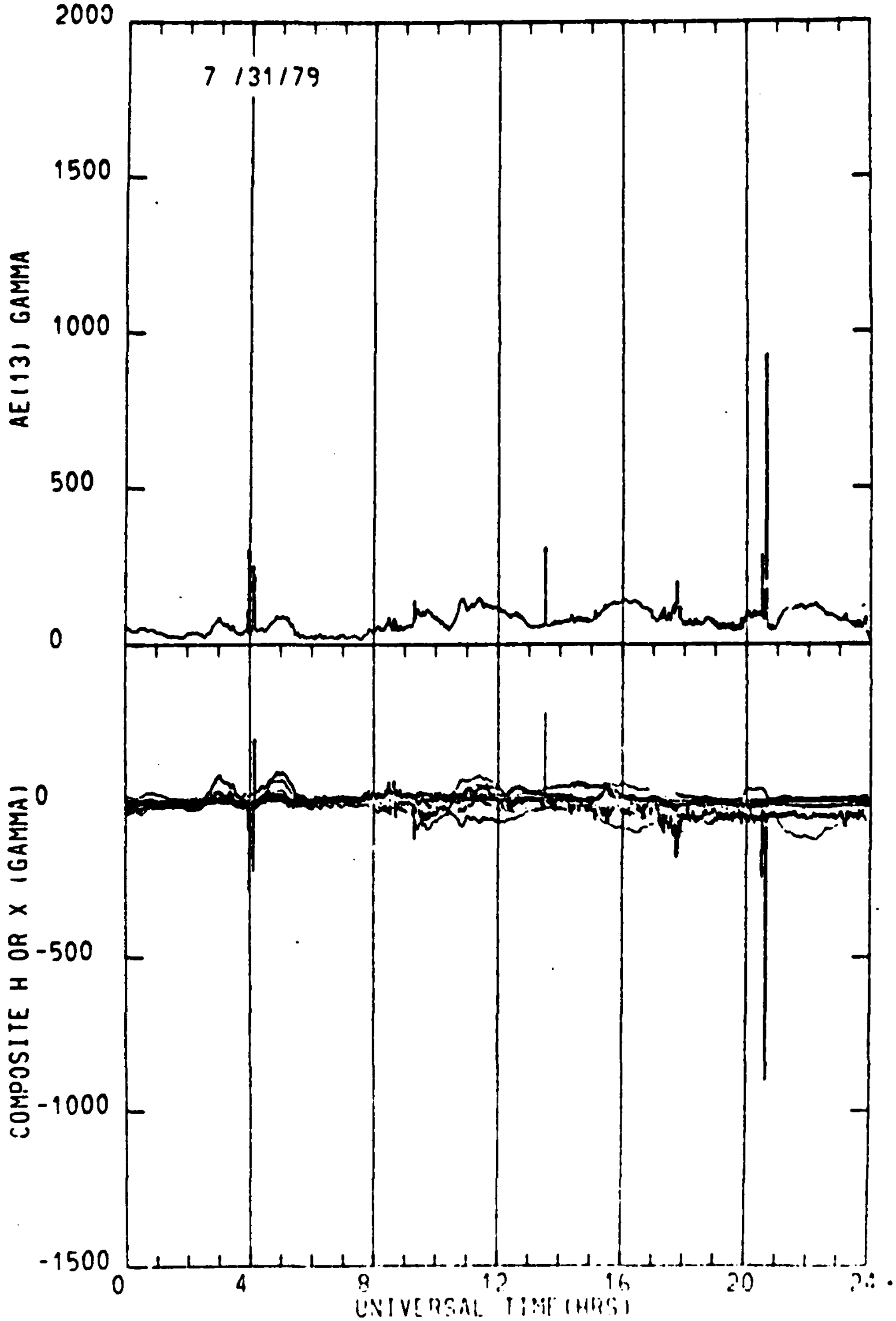

7 /2/ /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

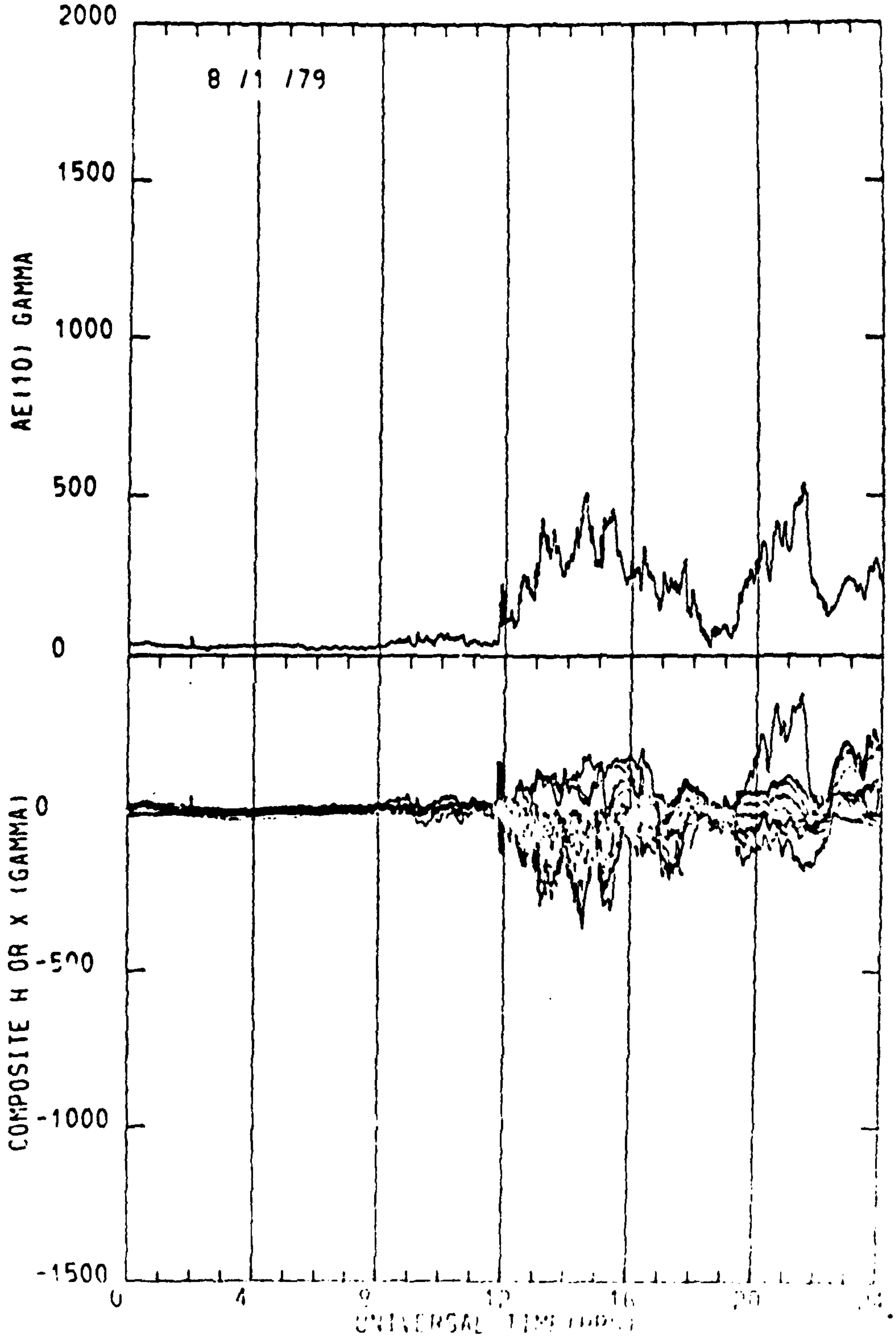

7 /28/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



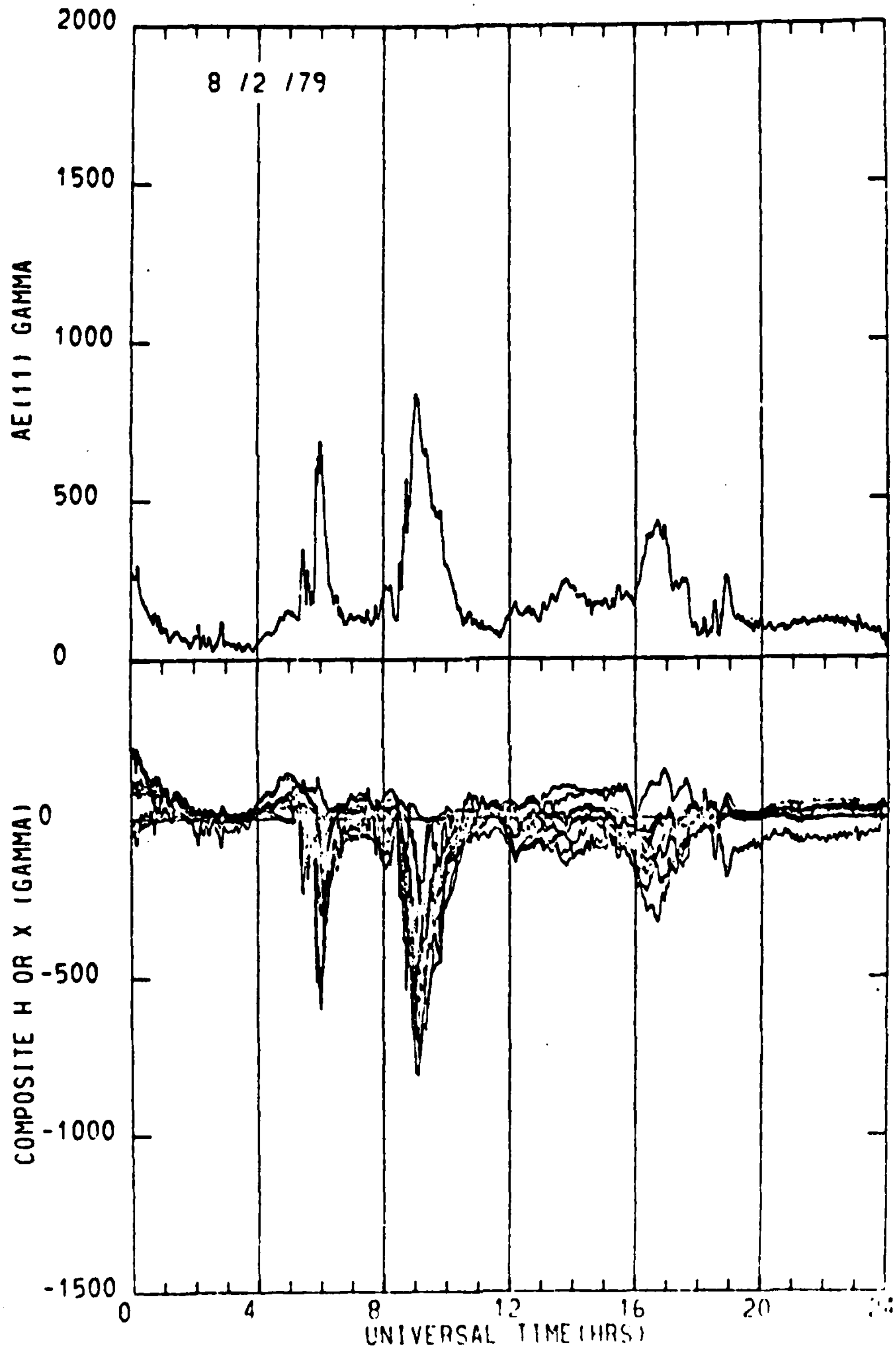
7 /29/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

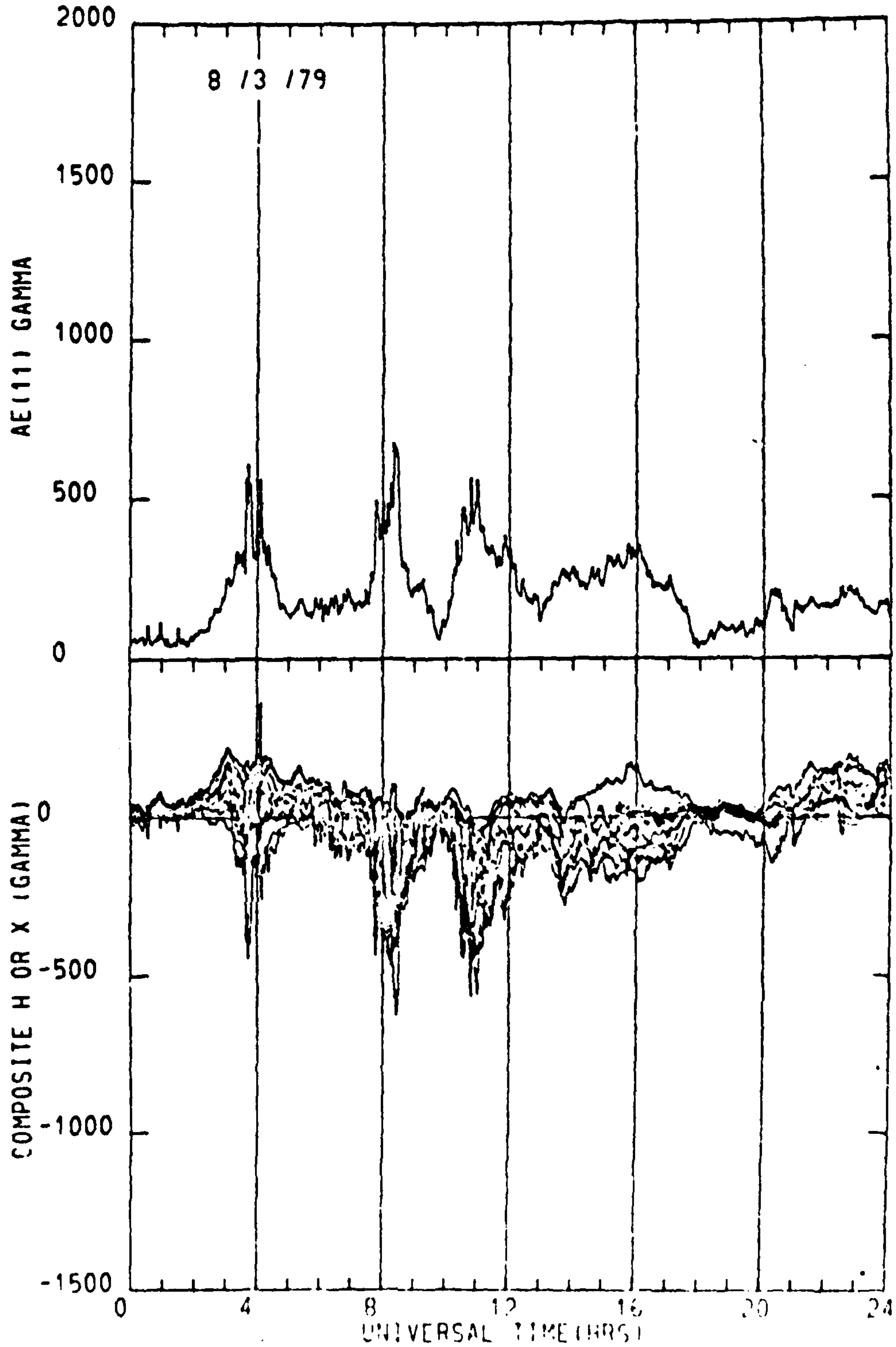

7 /30/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

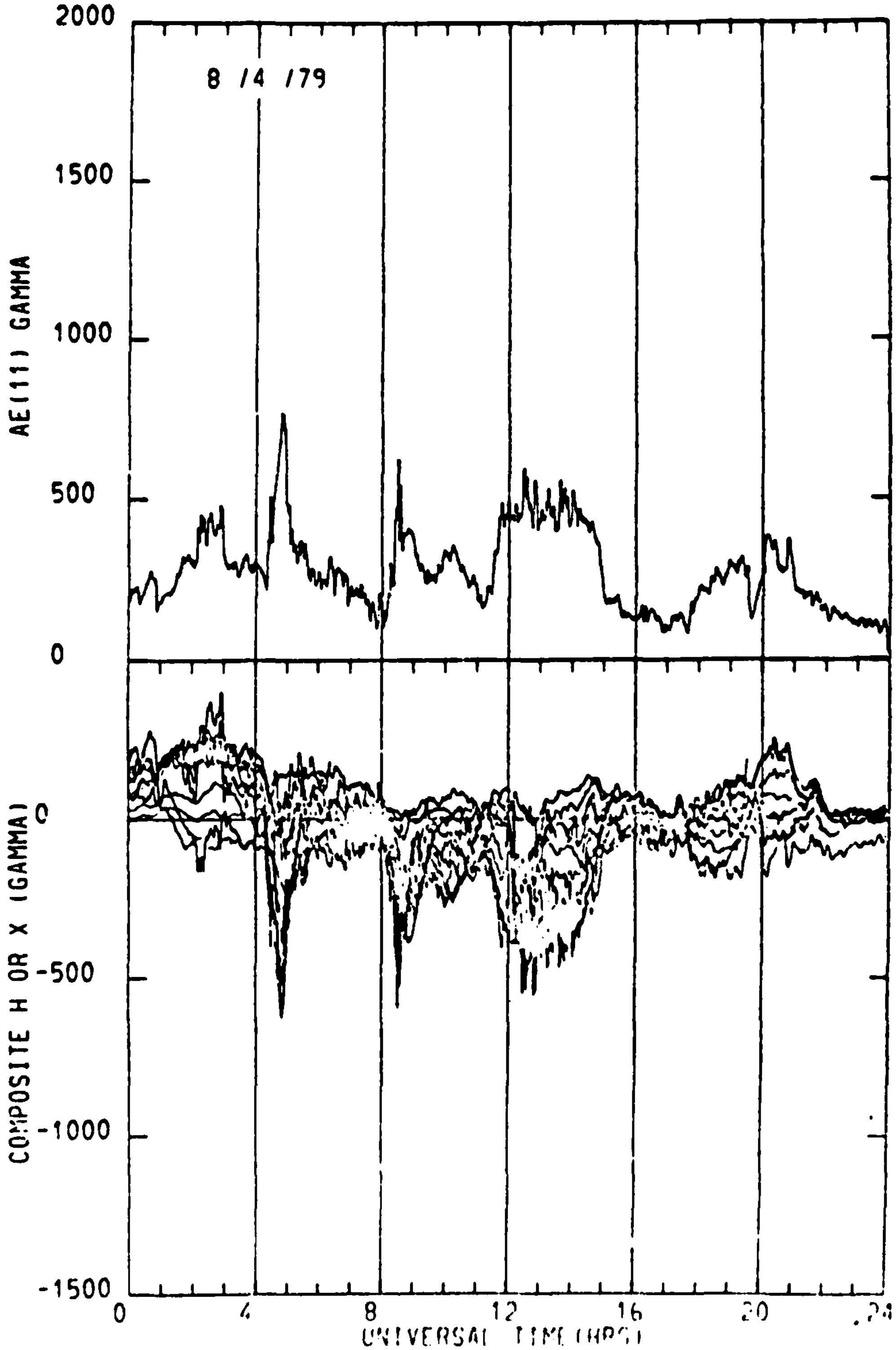

7 /31/79
AE(13) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

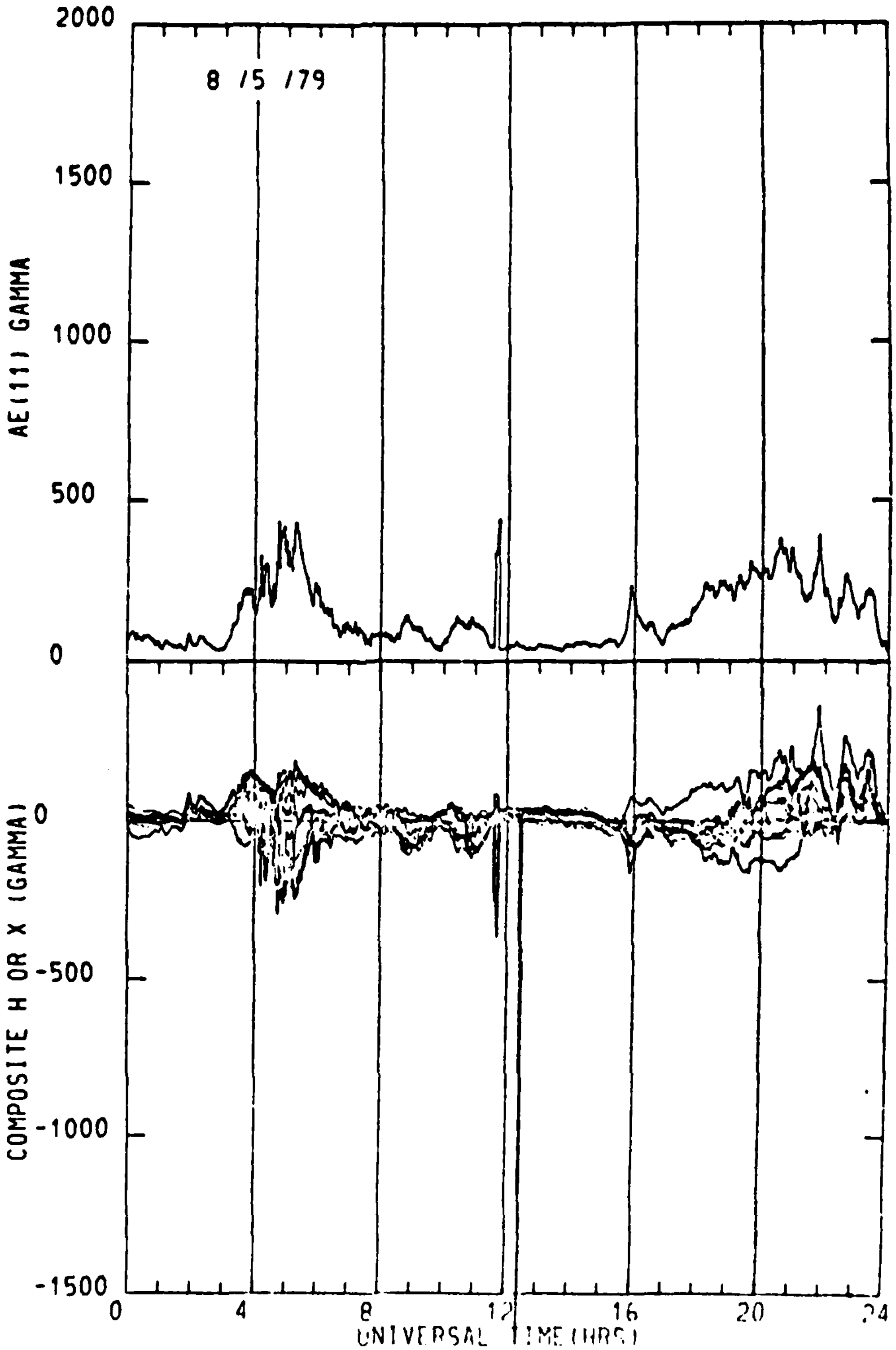


2000
1500
1000
500
0
8 /1 /79
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

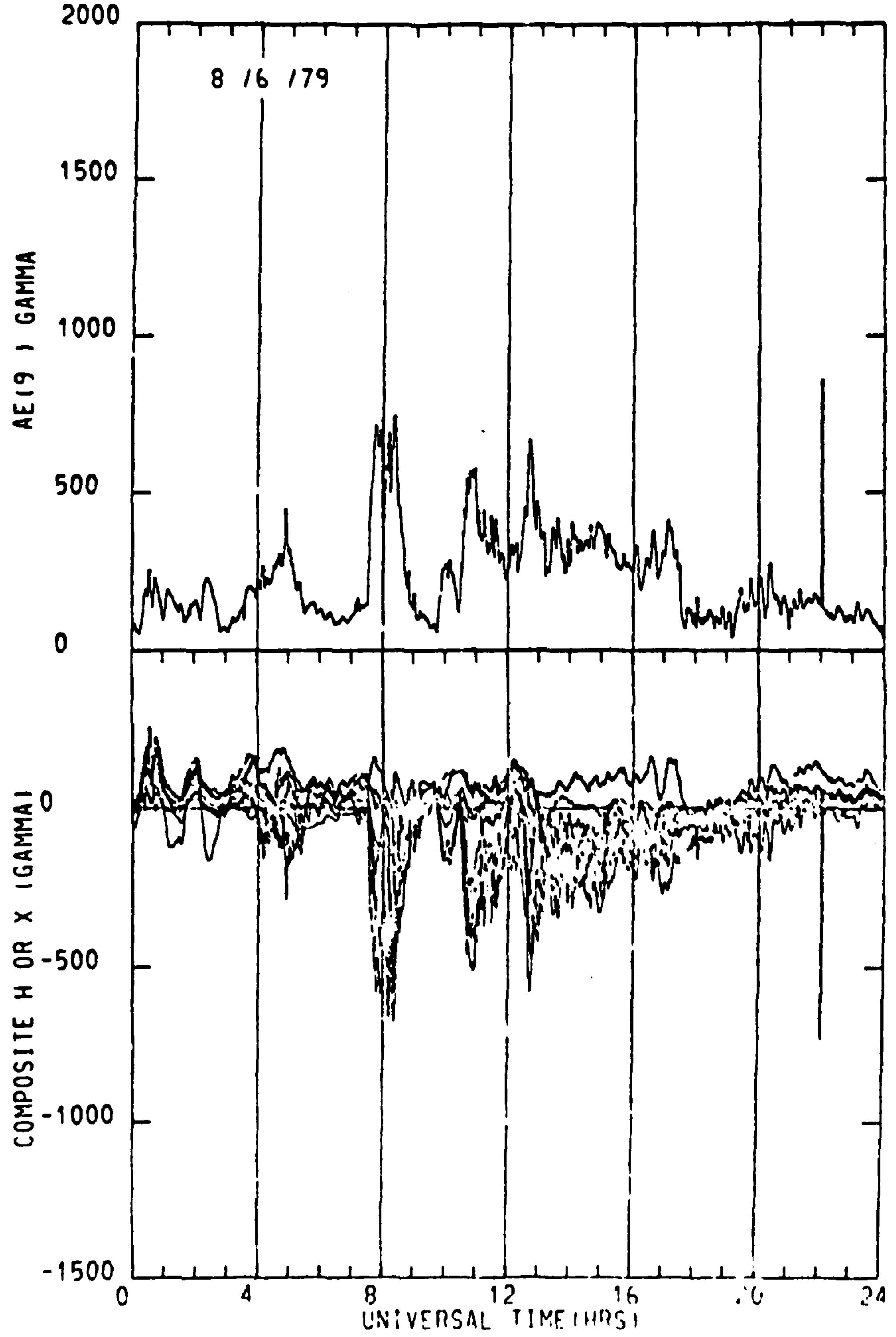

8 /2 /79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)


8 /3 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

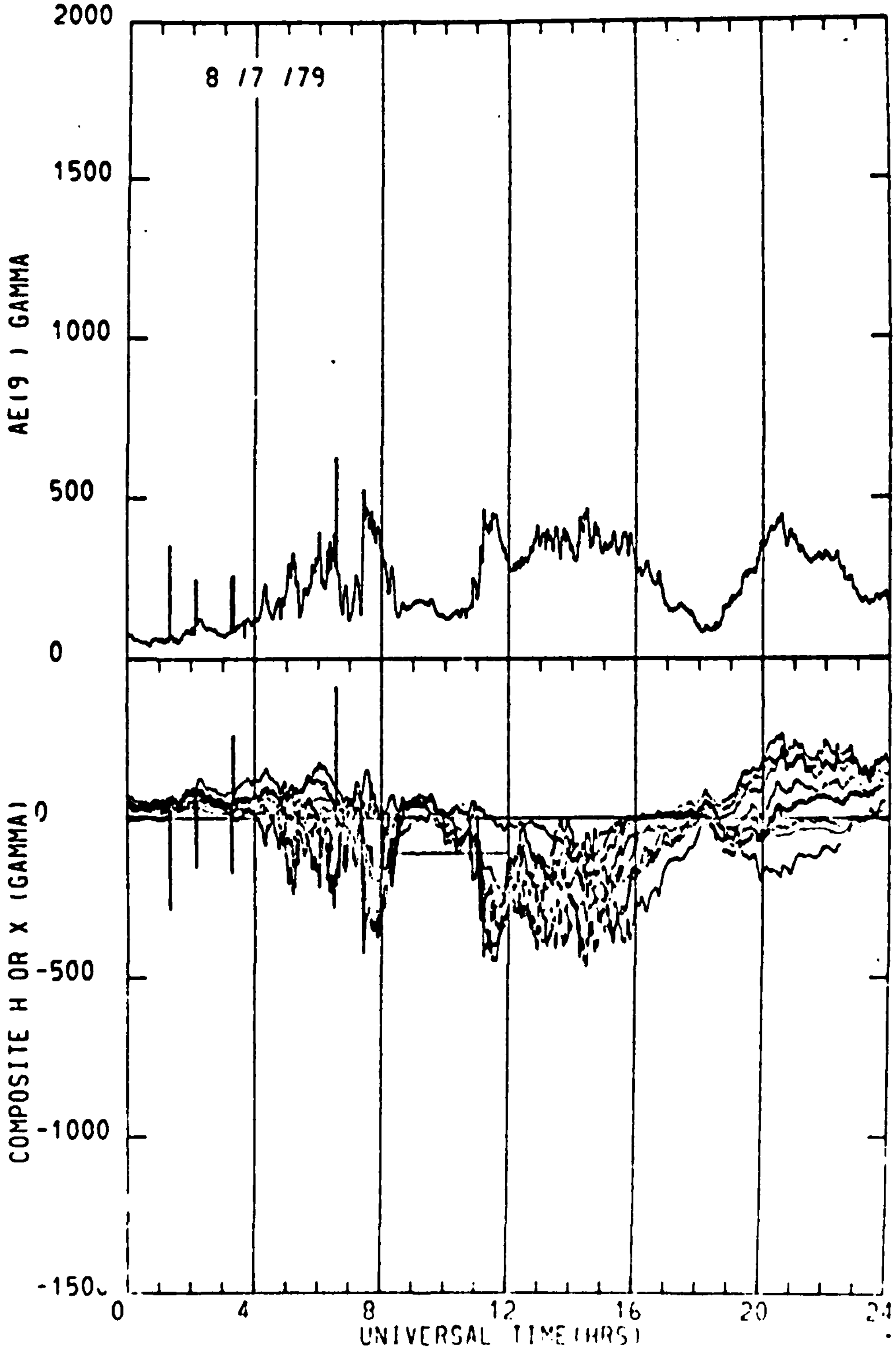

8 /4 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

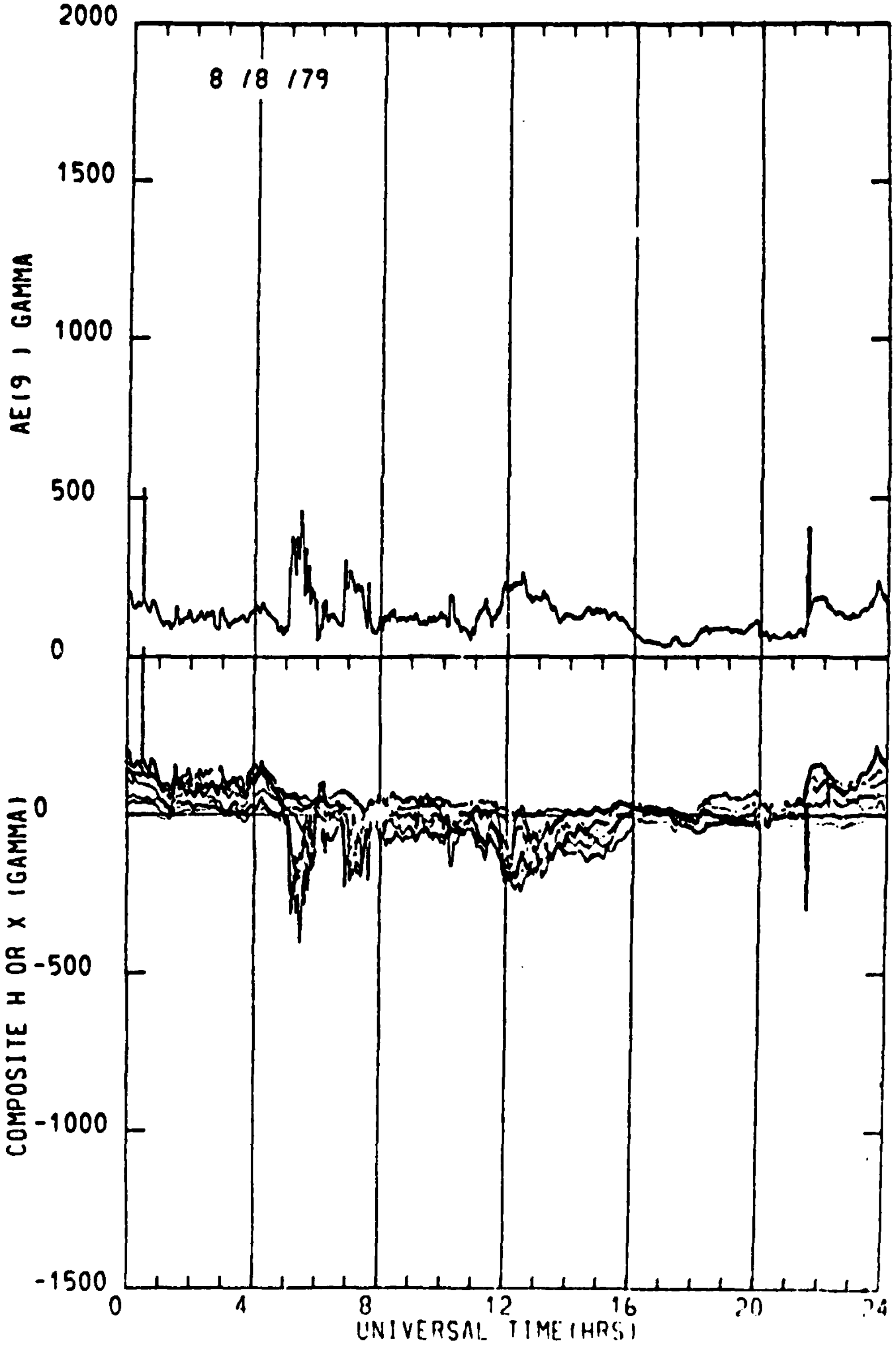


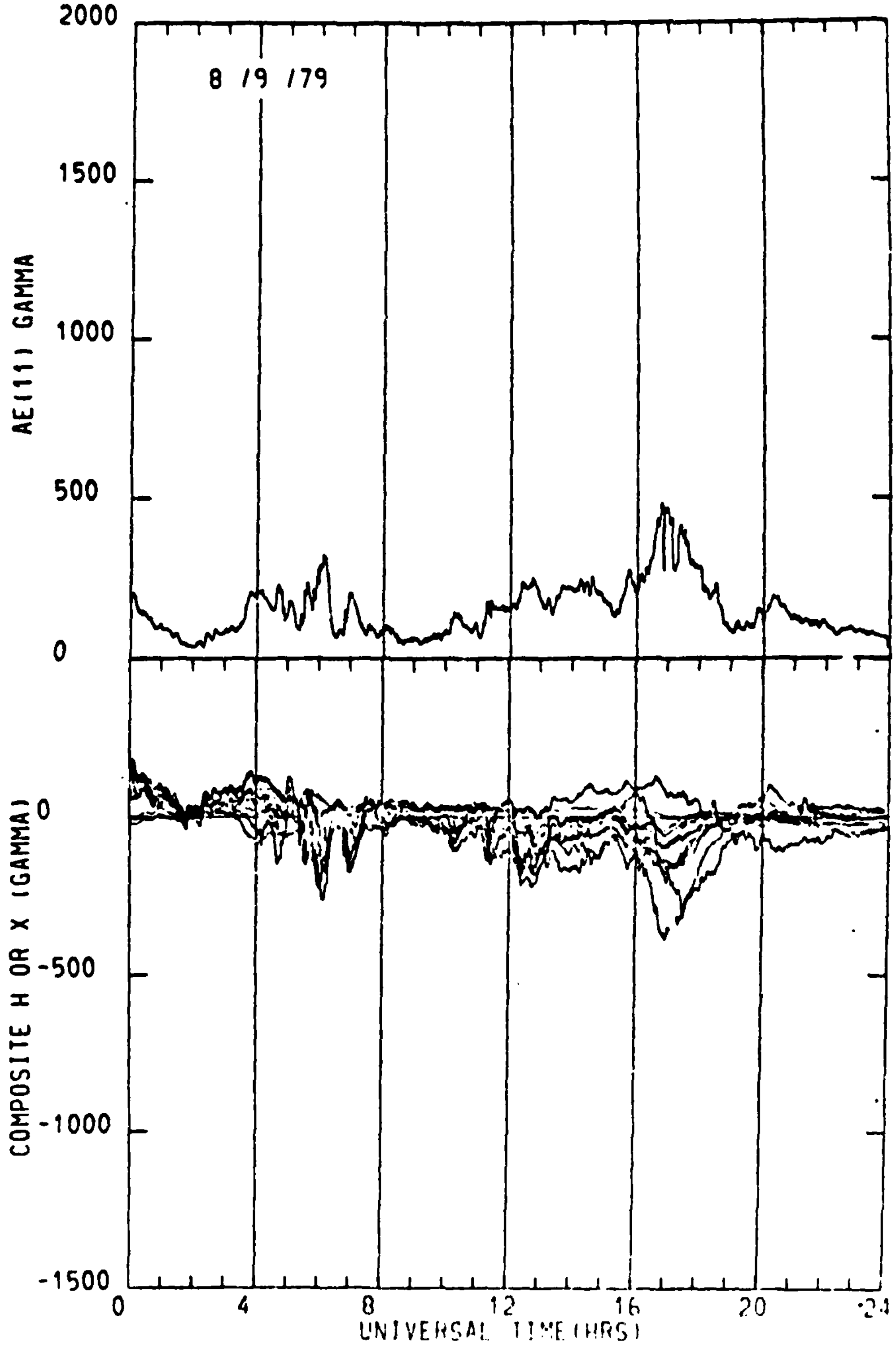
8 /5 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

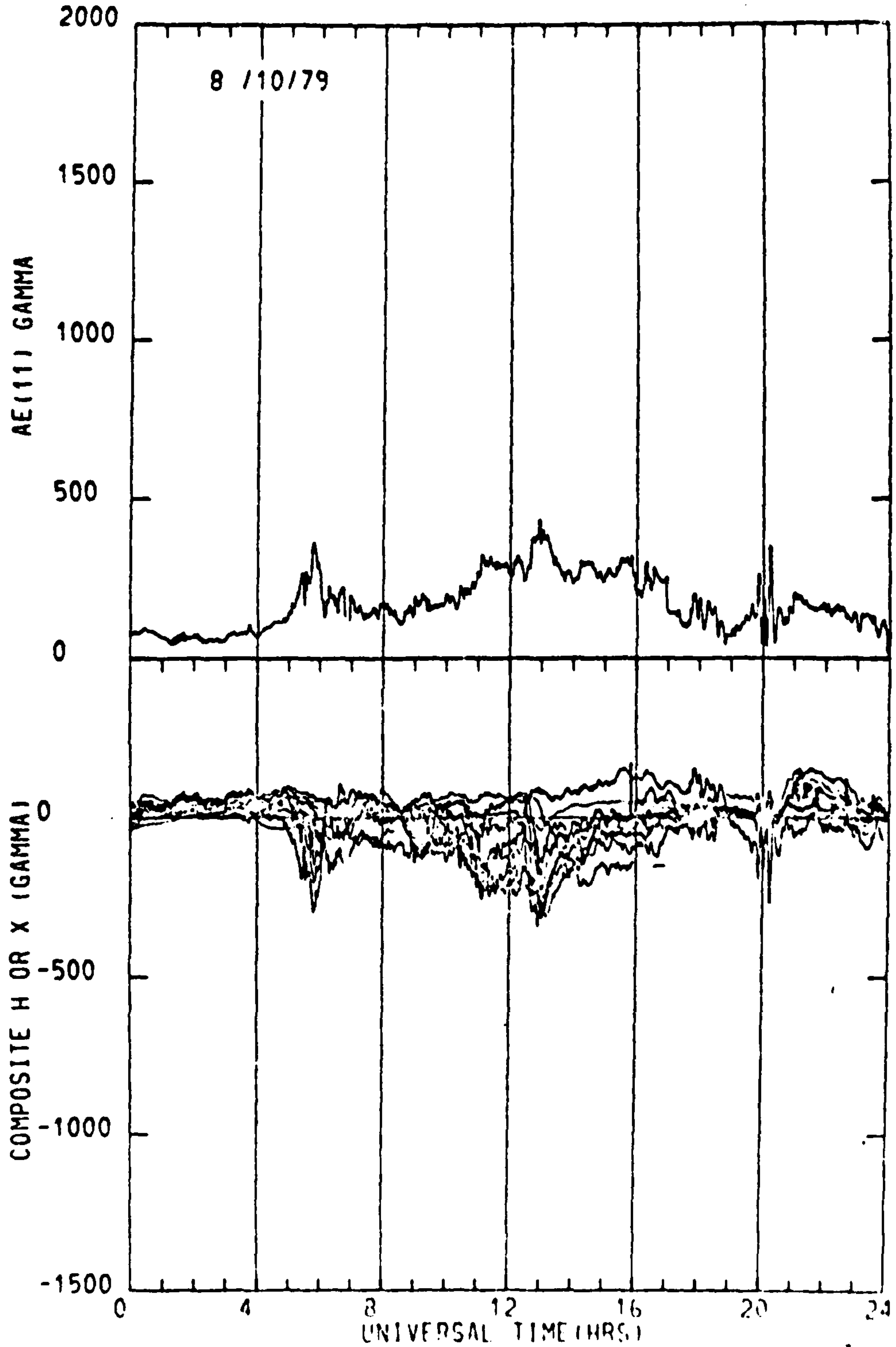


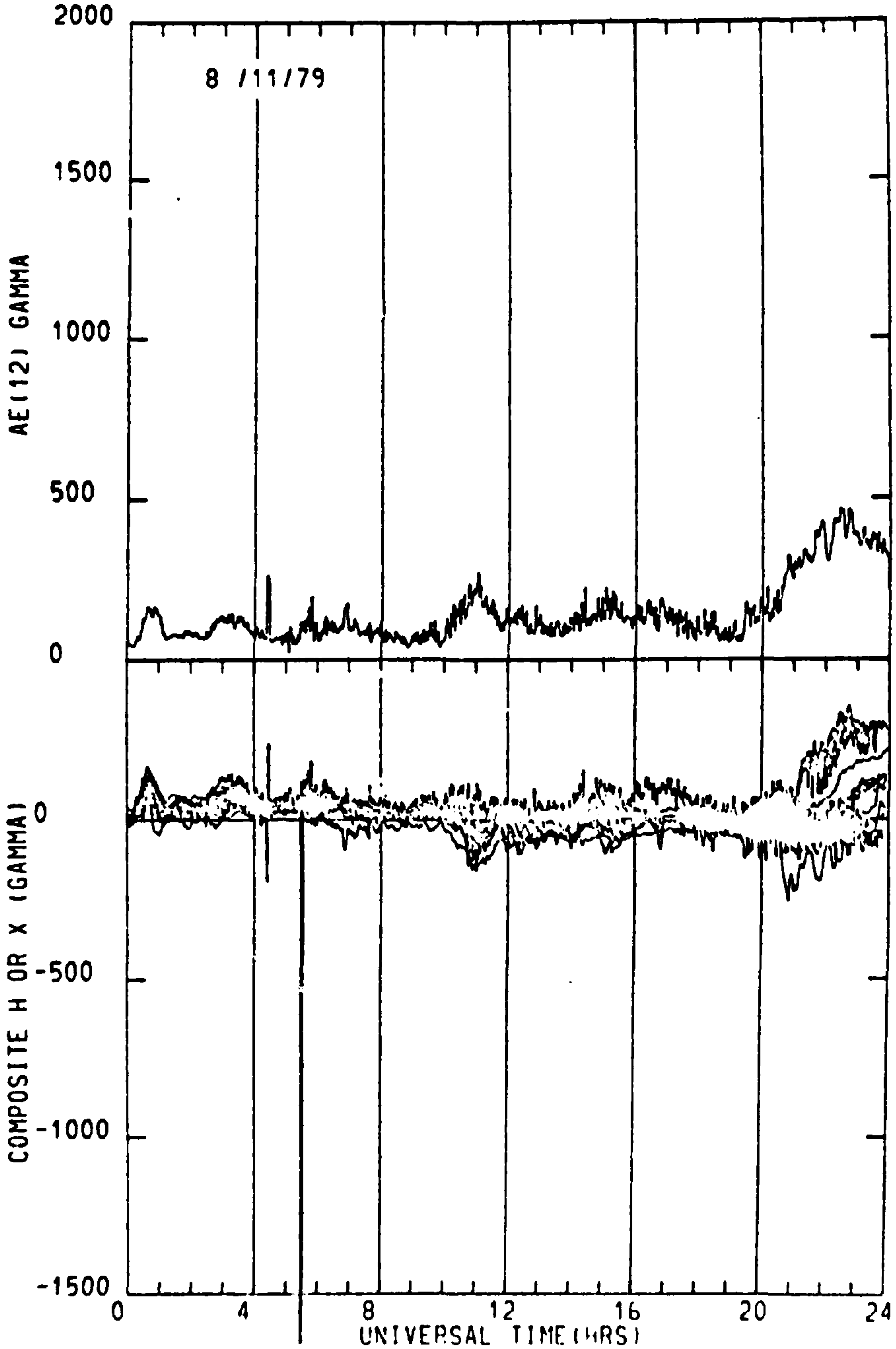
8 /6 /79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
24
UNIVERSAL TIME(HRS)


8 /7 /79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

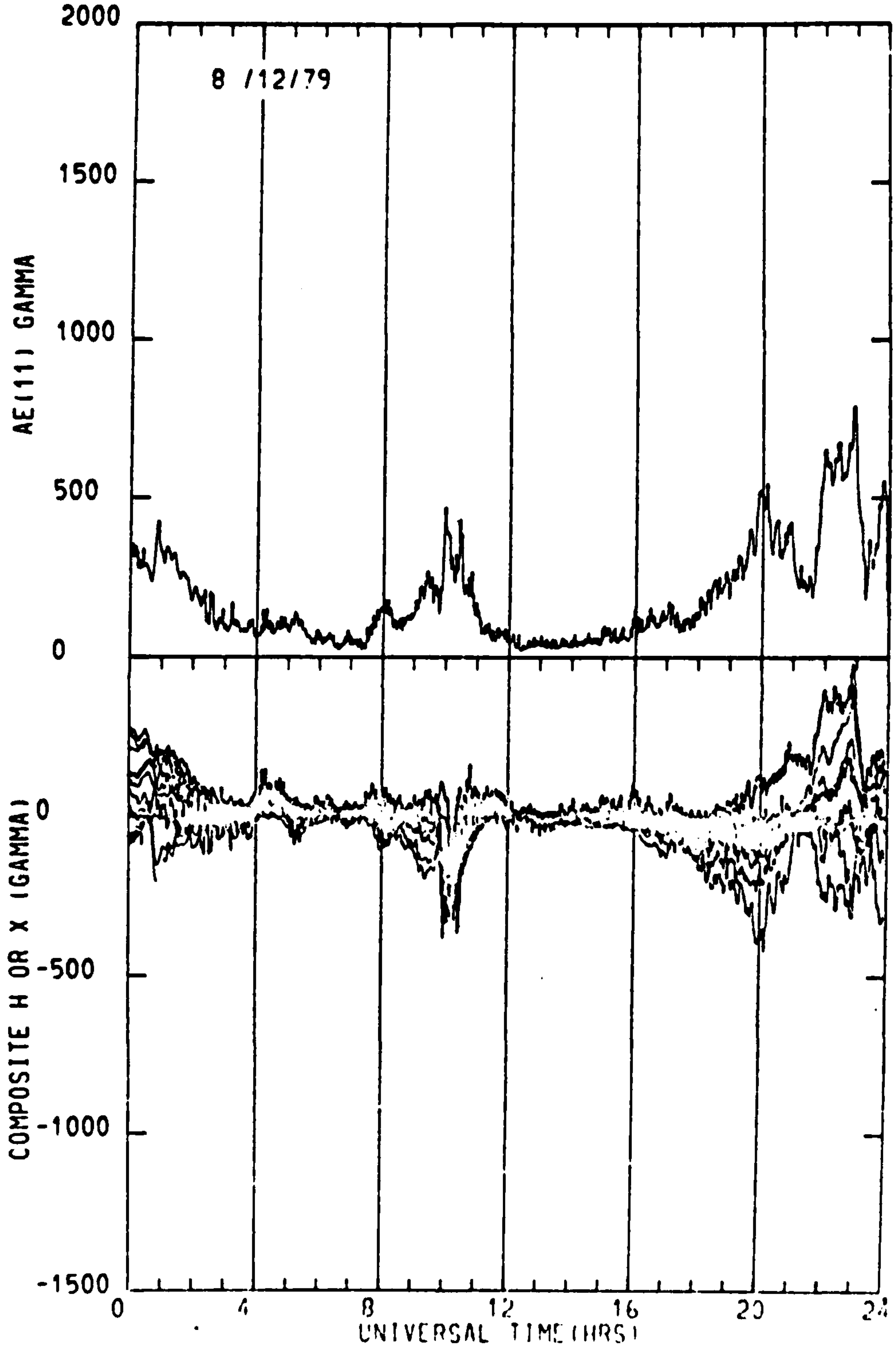

8 /8 /79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

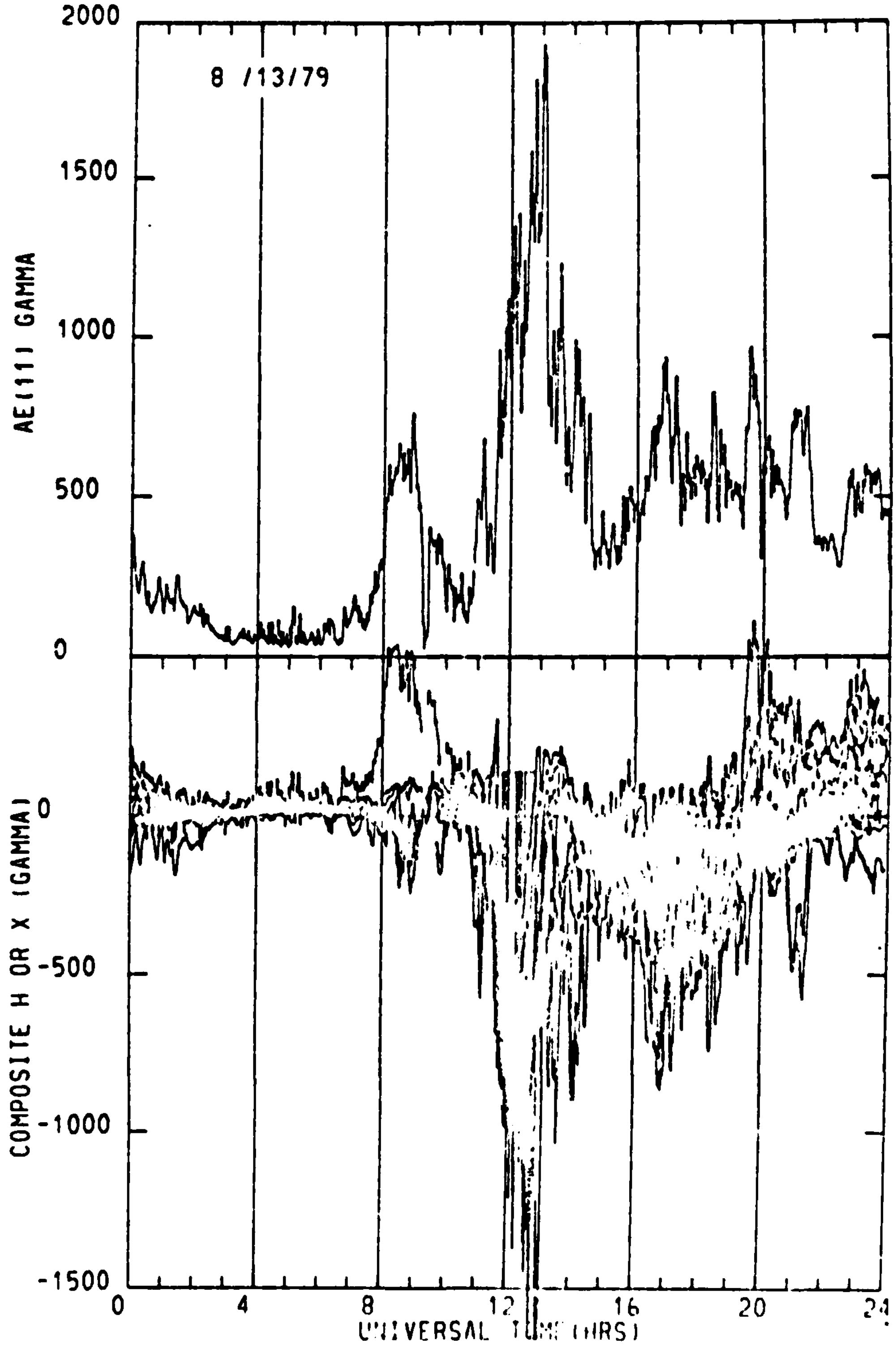

8 /9 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

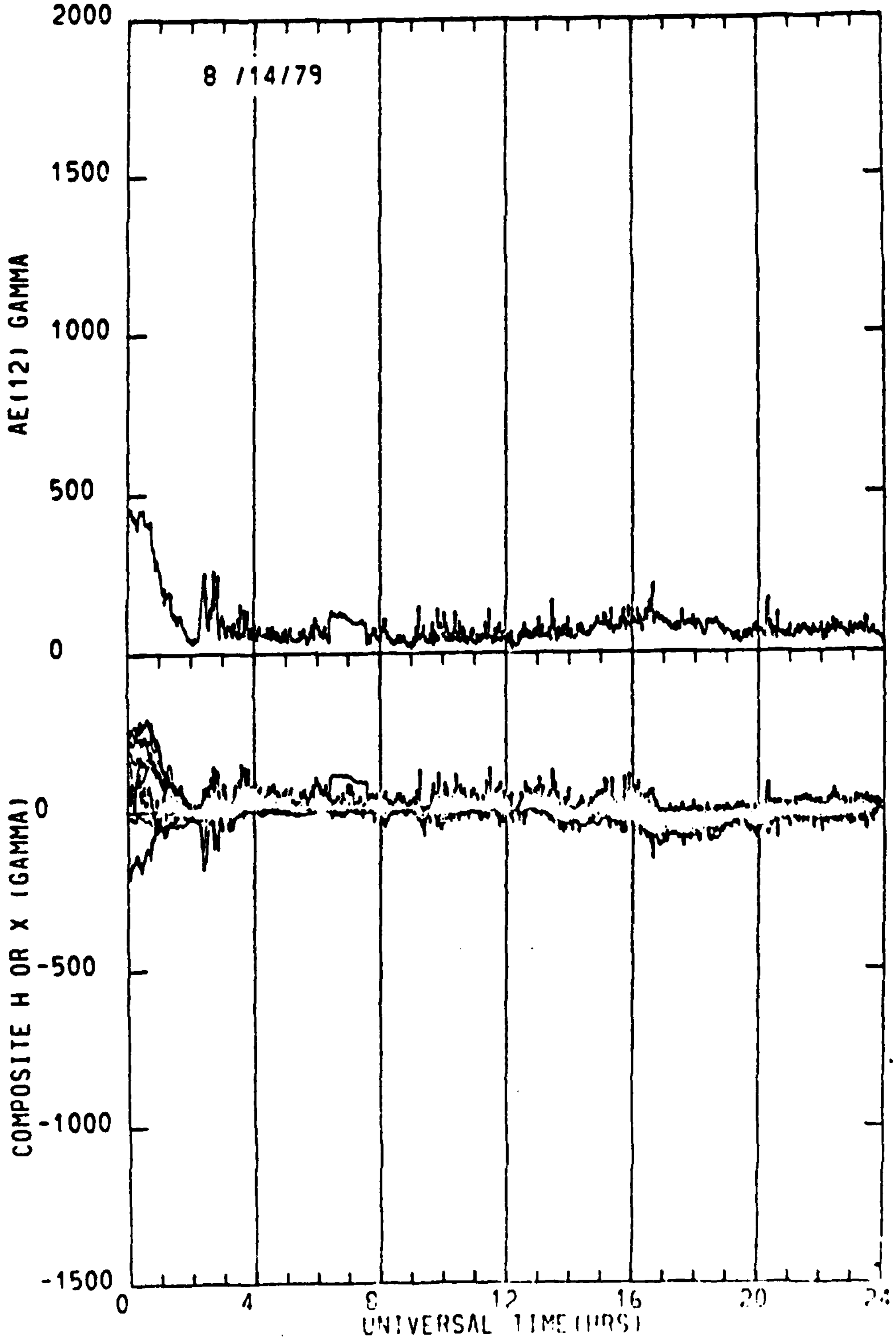

8 /10/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

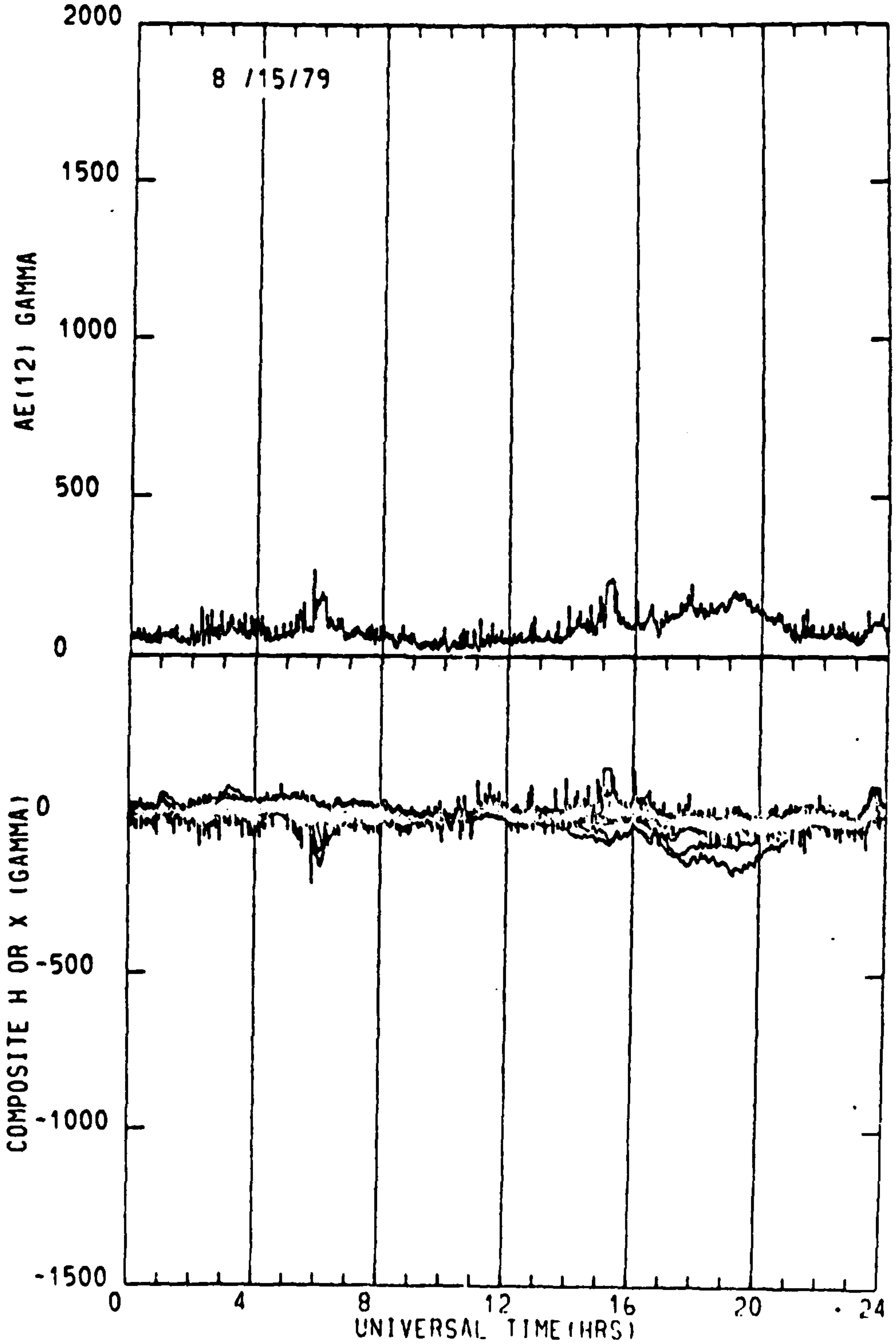


2000
8 /11/79
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

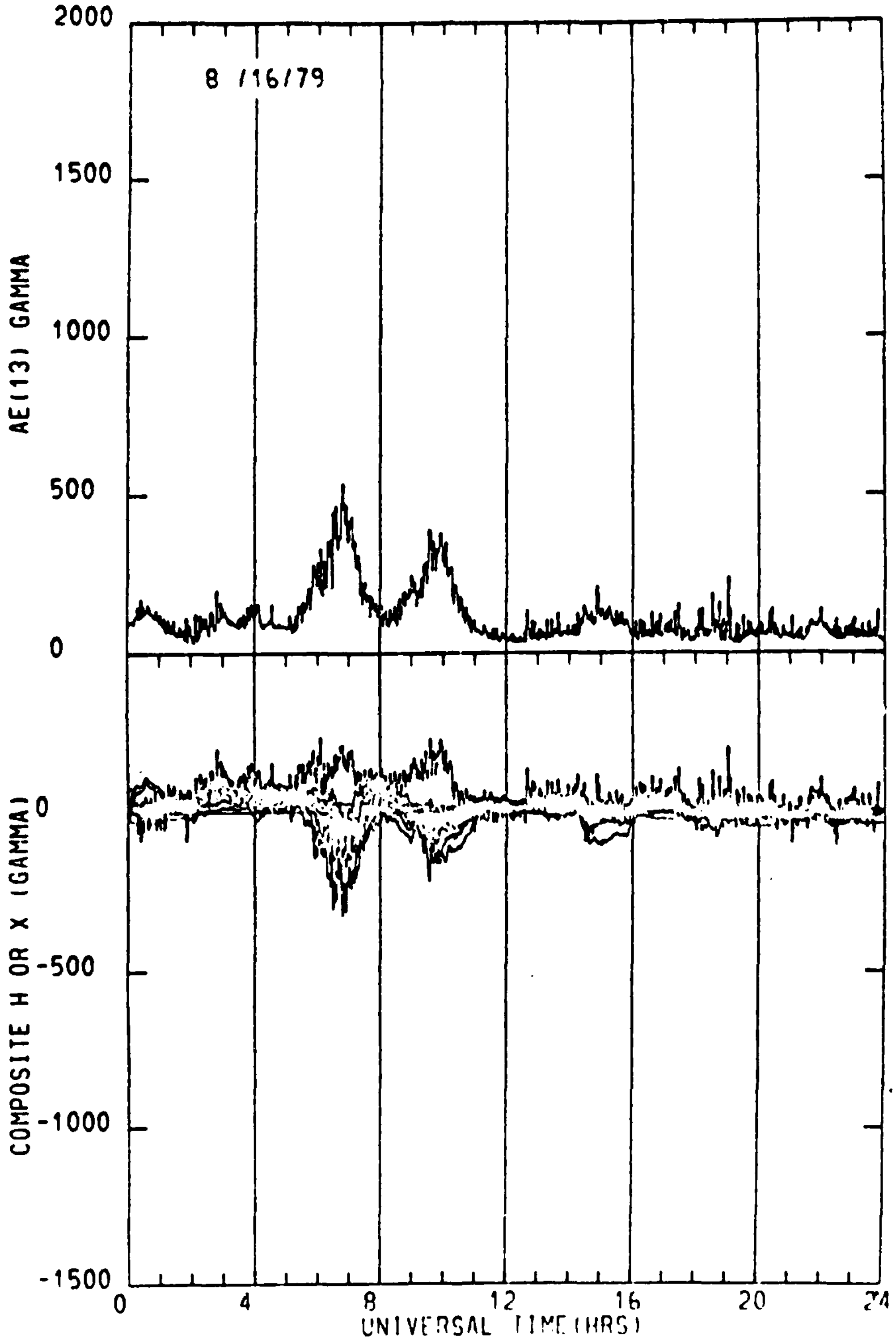

8 /12/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

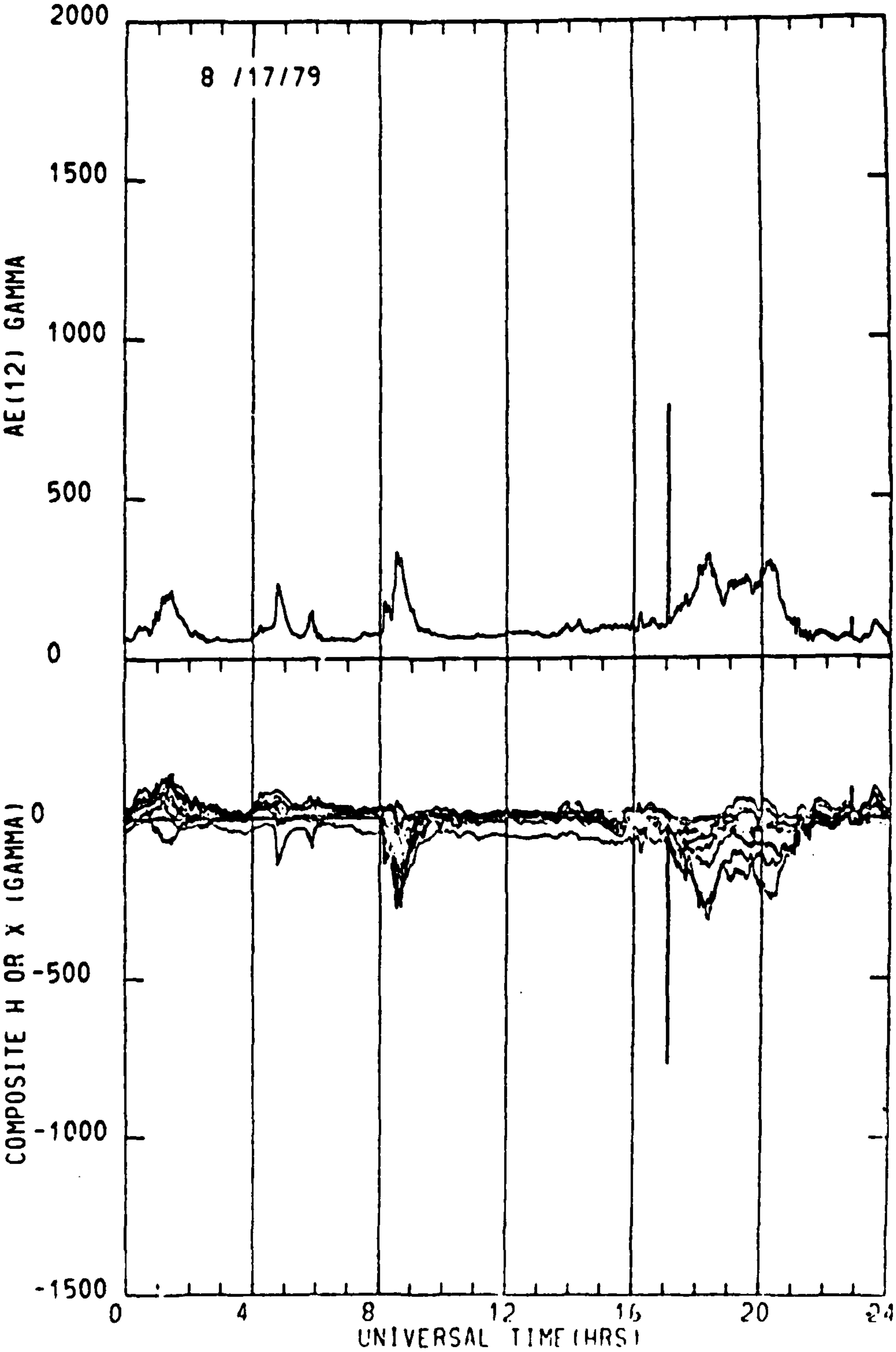

8 /13/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

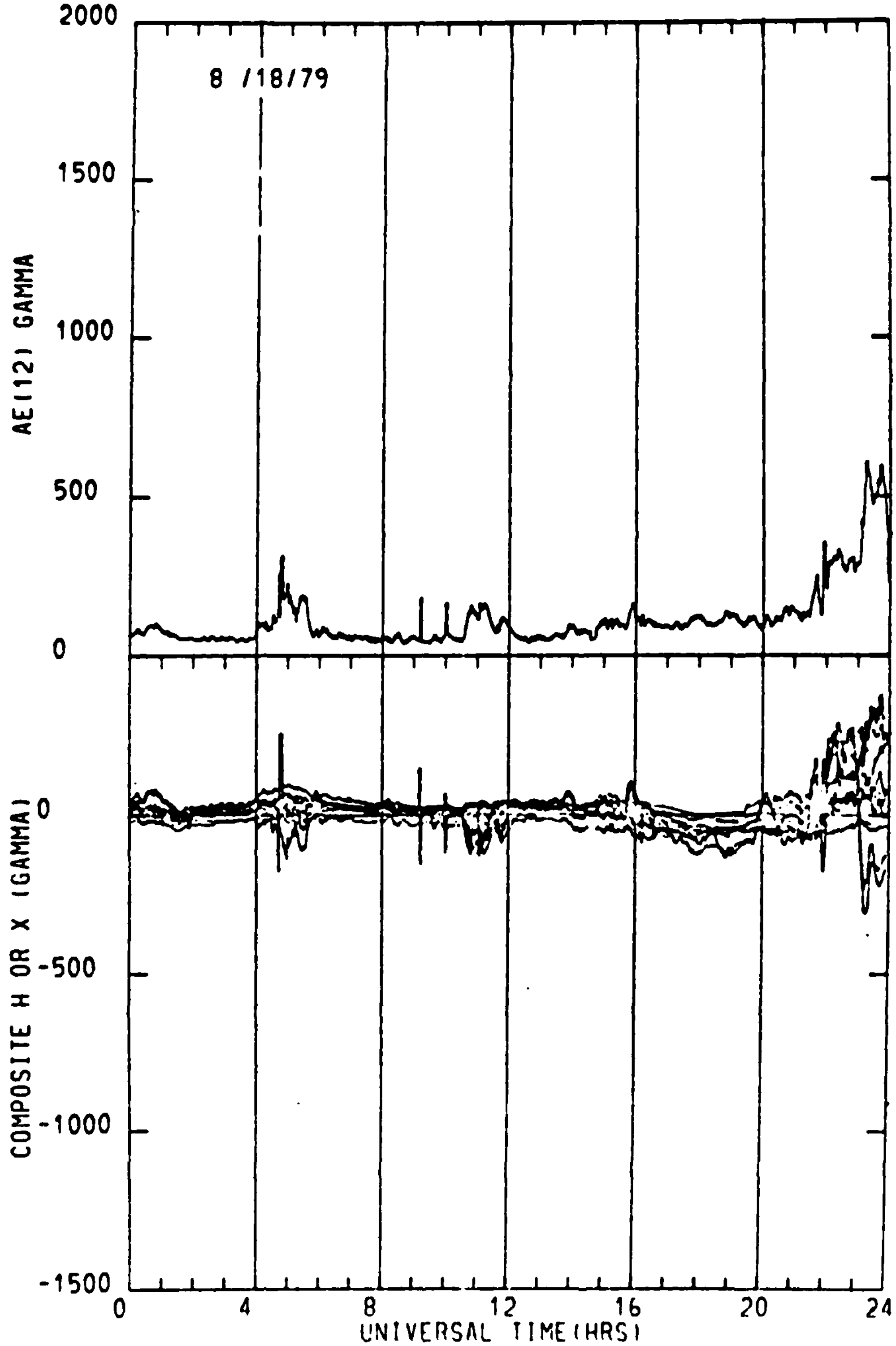

8 /14/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

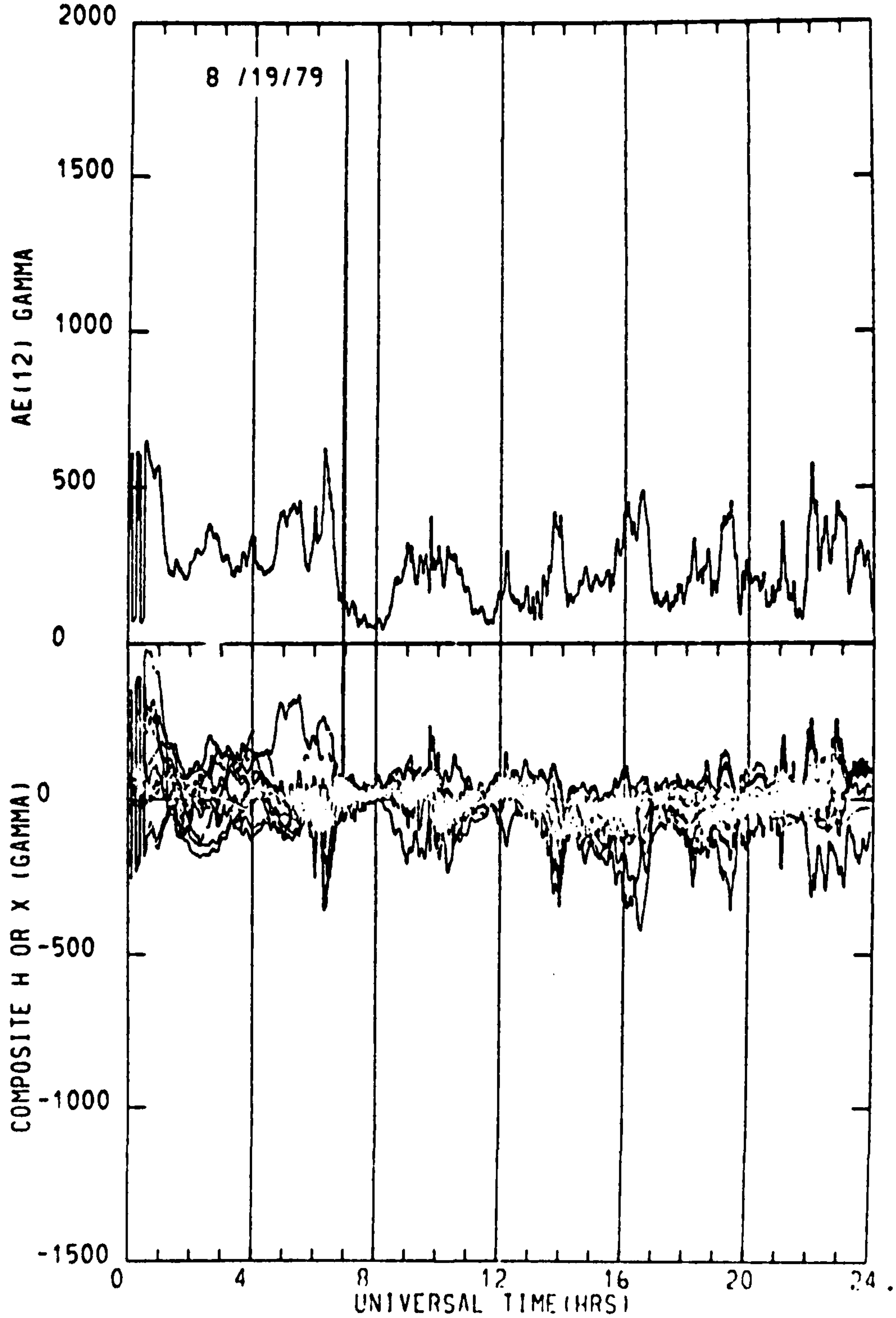


8 /15/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

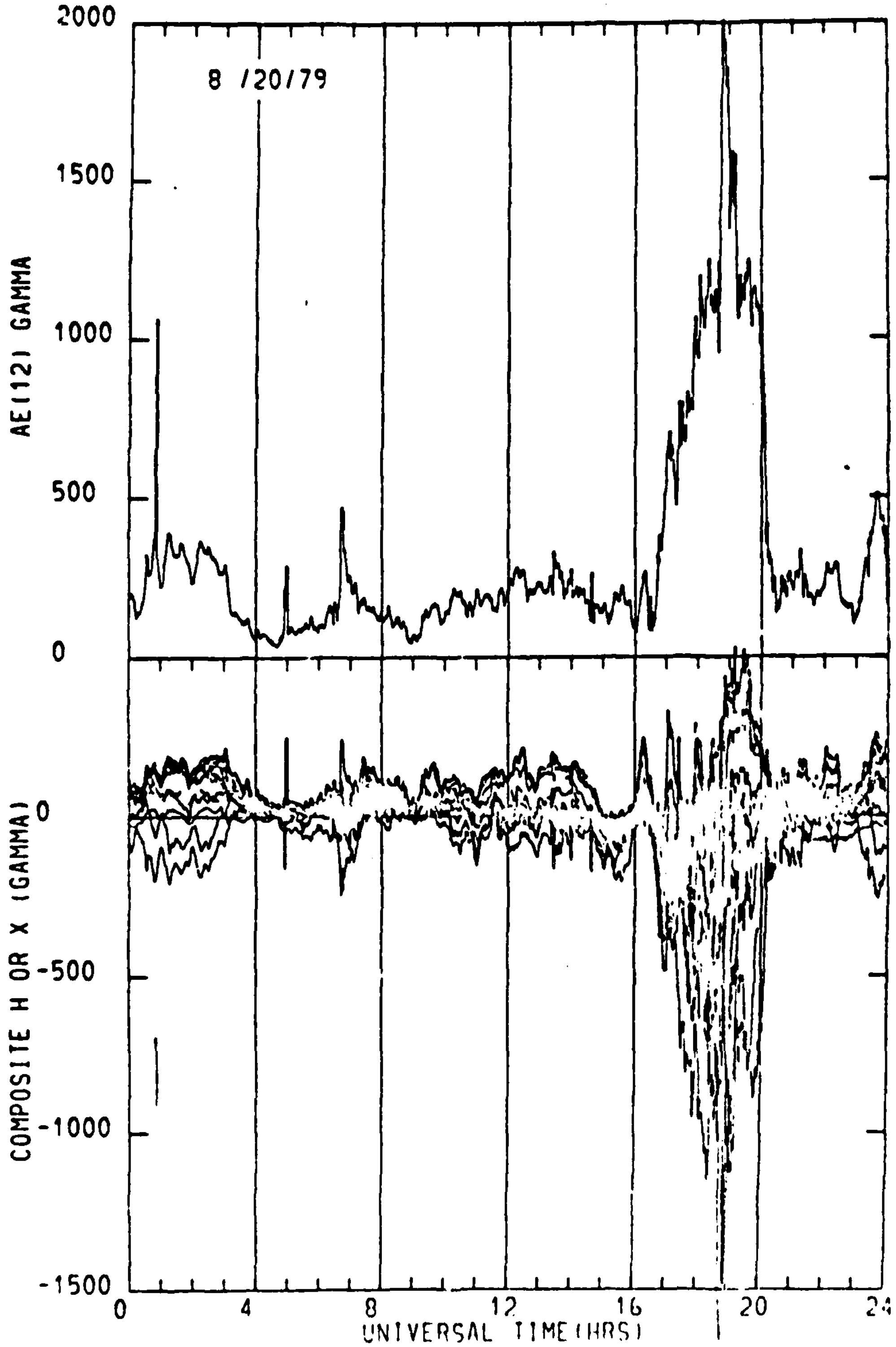

8 /16/79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

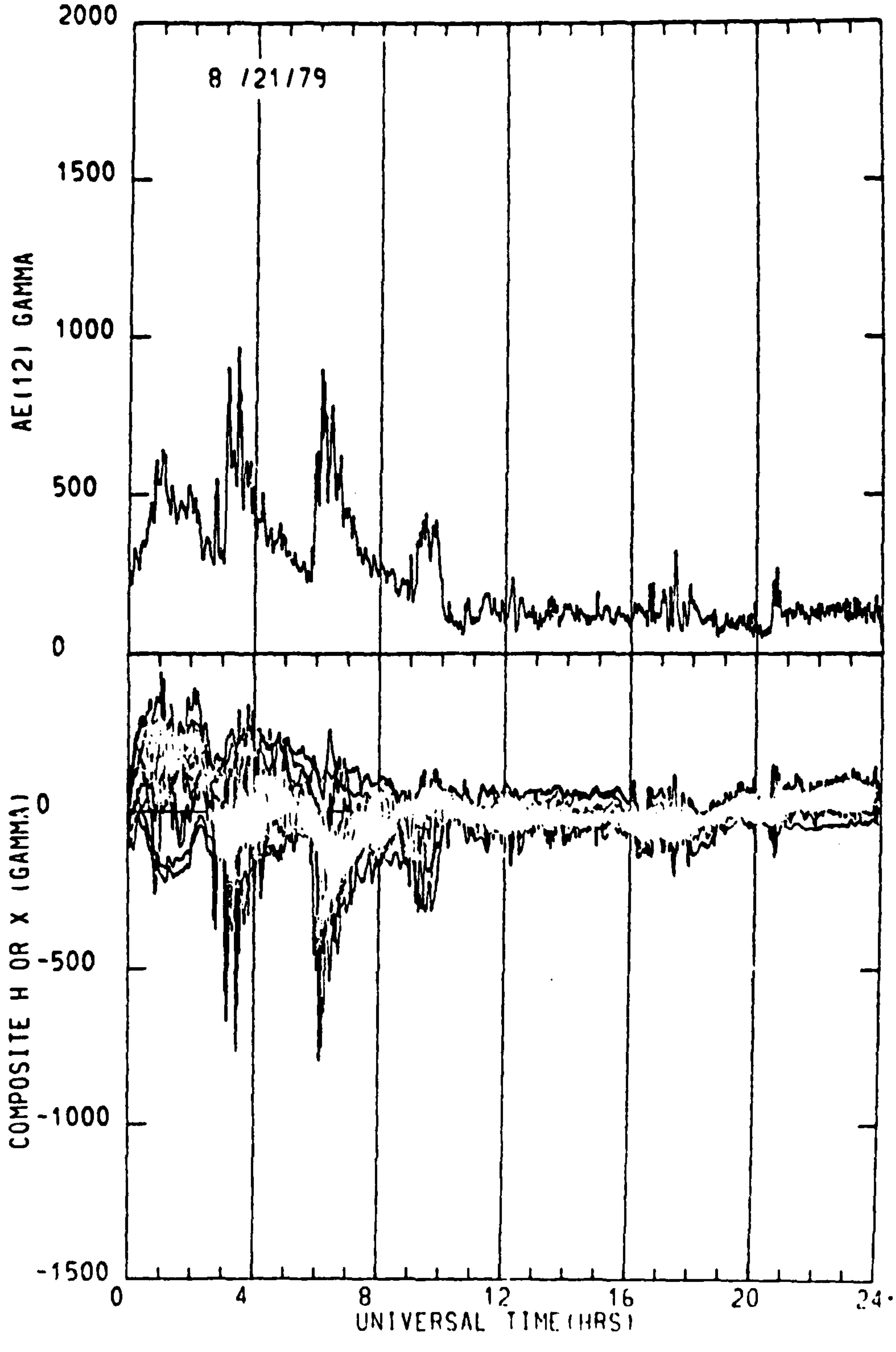

8 /17/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

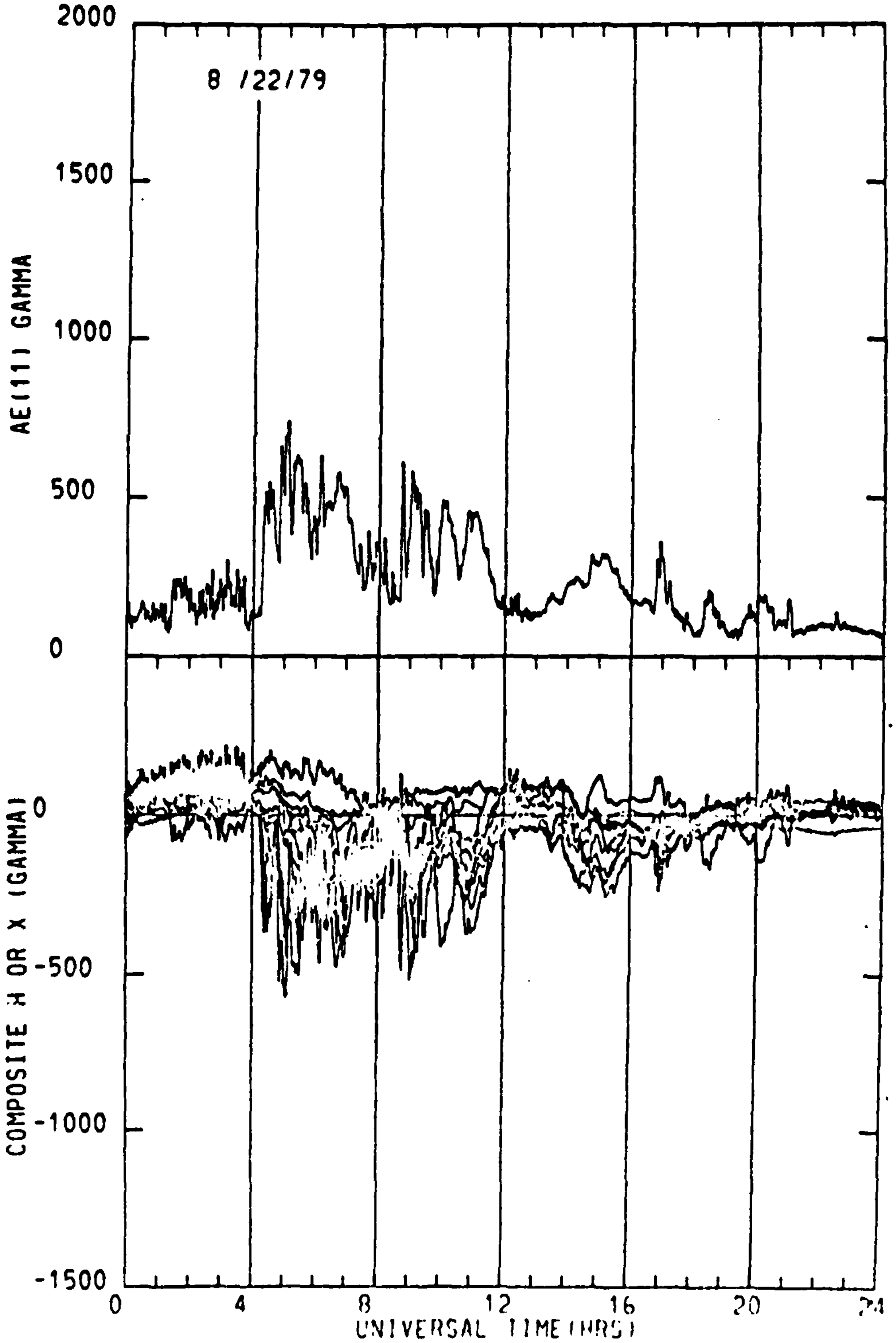

8 /18/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

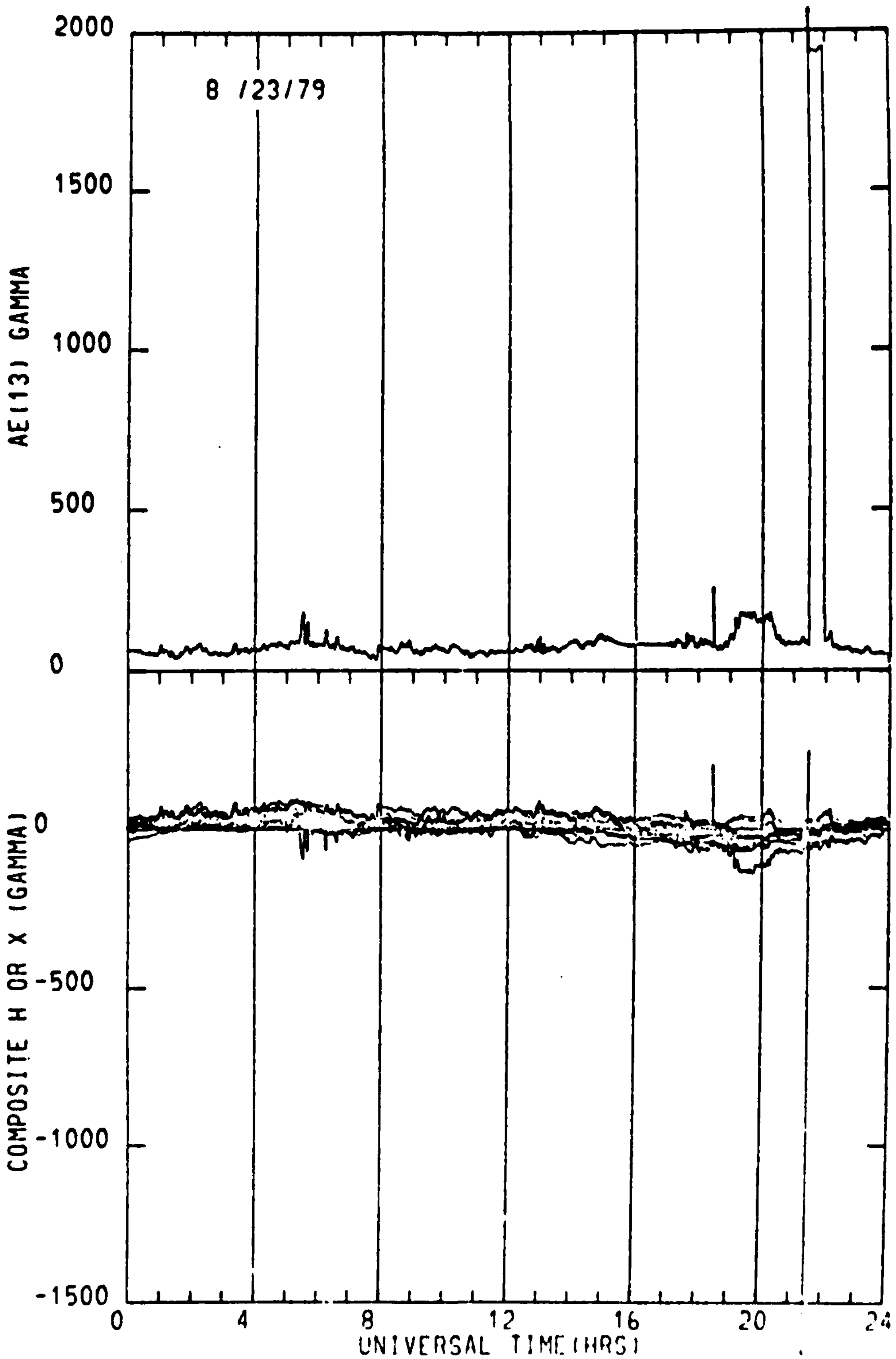


8 /19/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

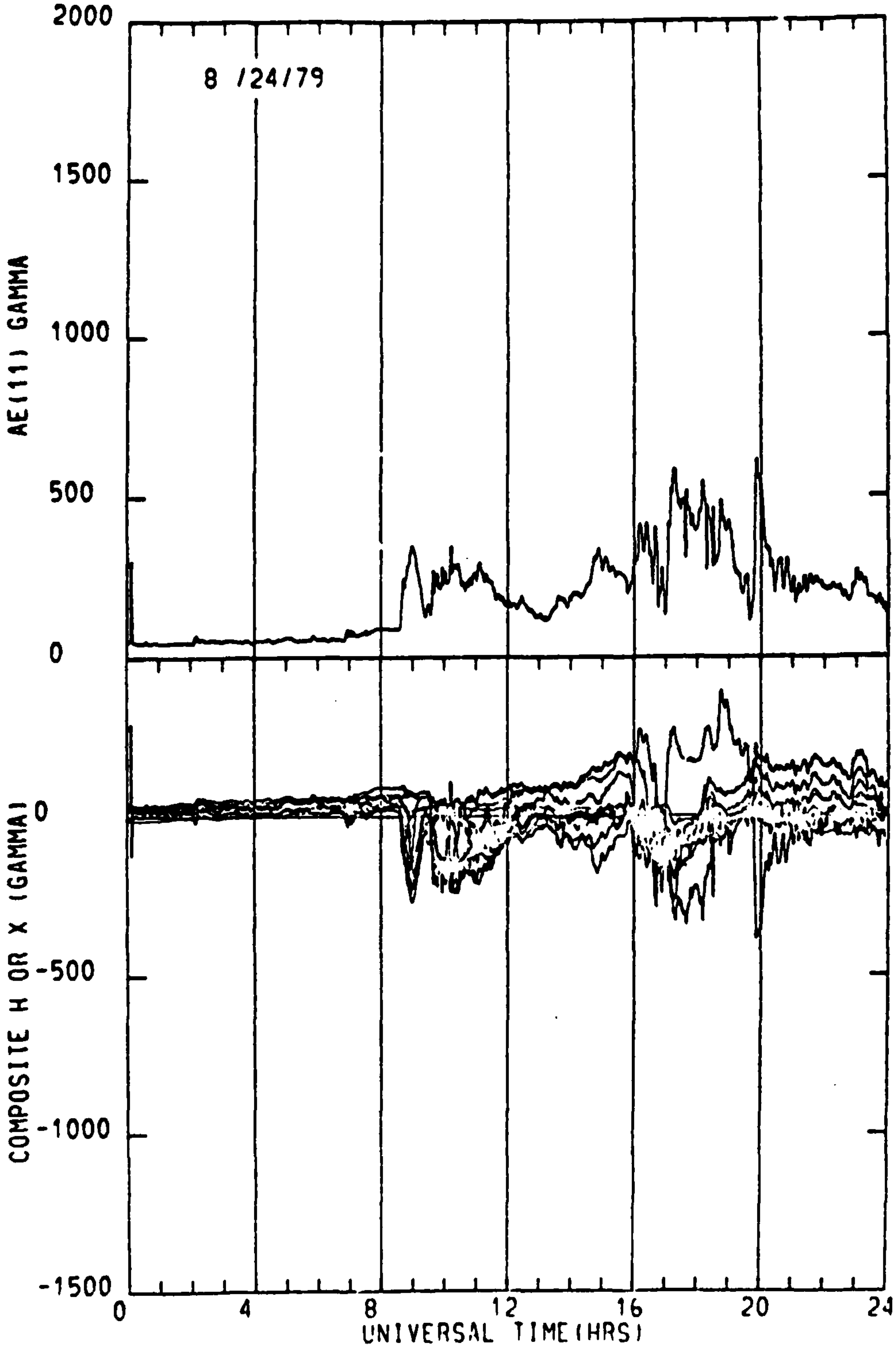

8 /20/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

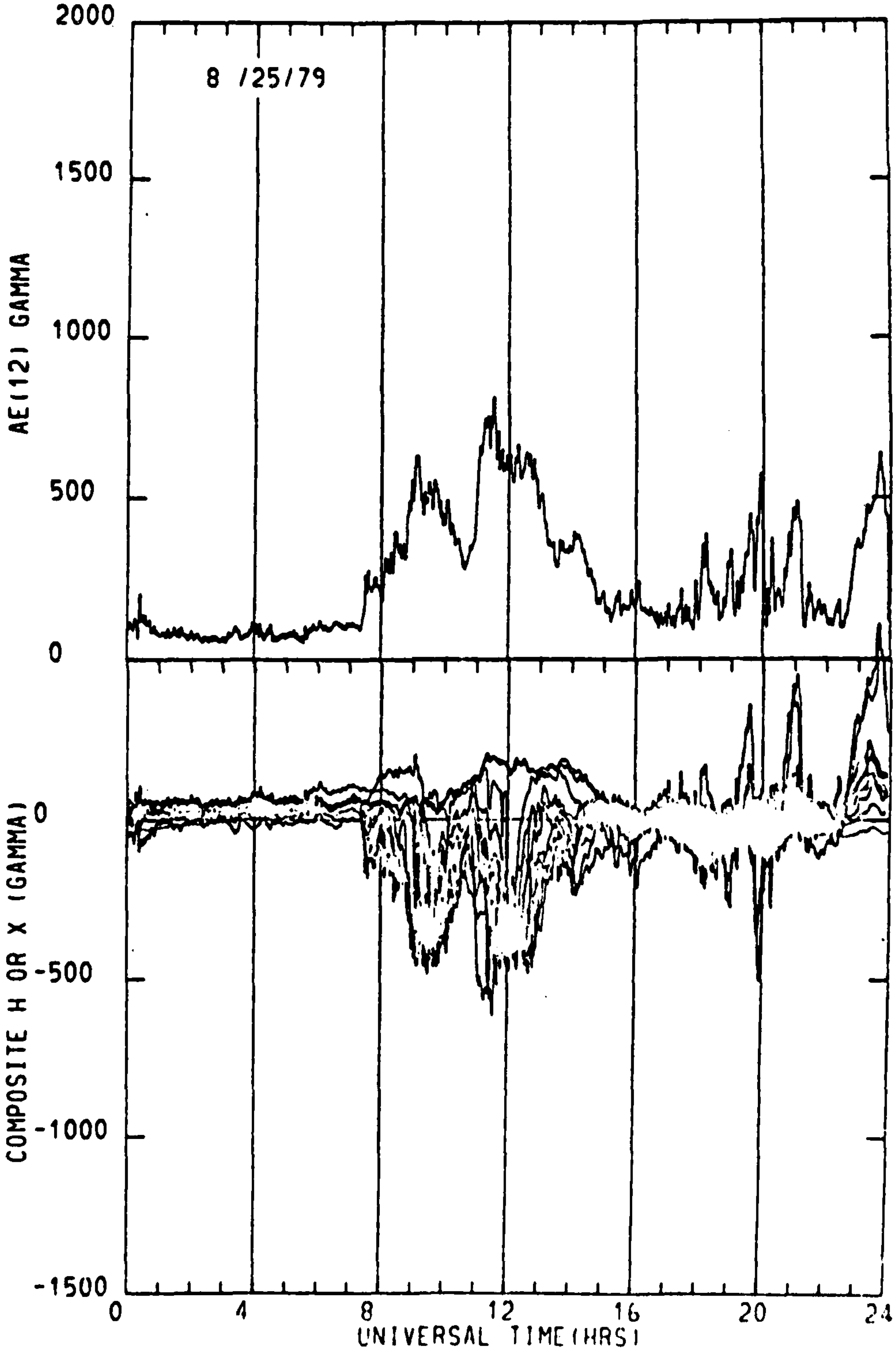

8 /21/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


8 /22/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

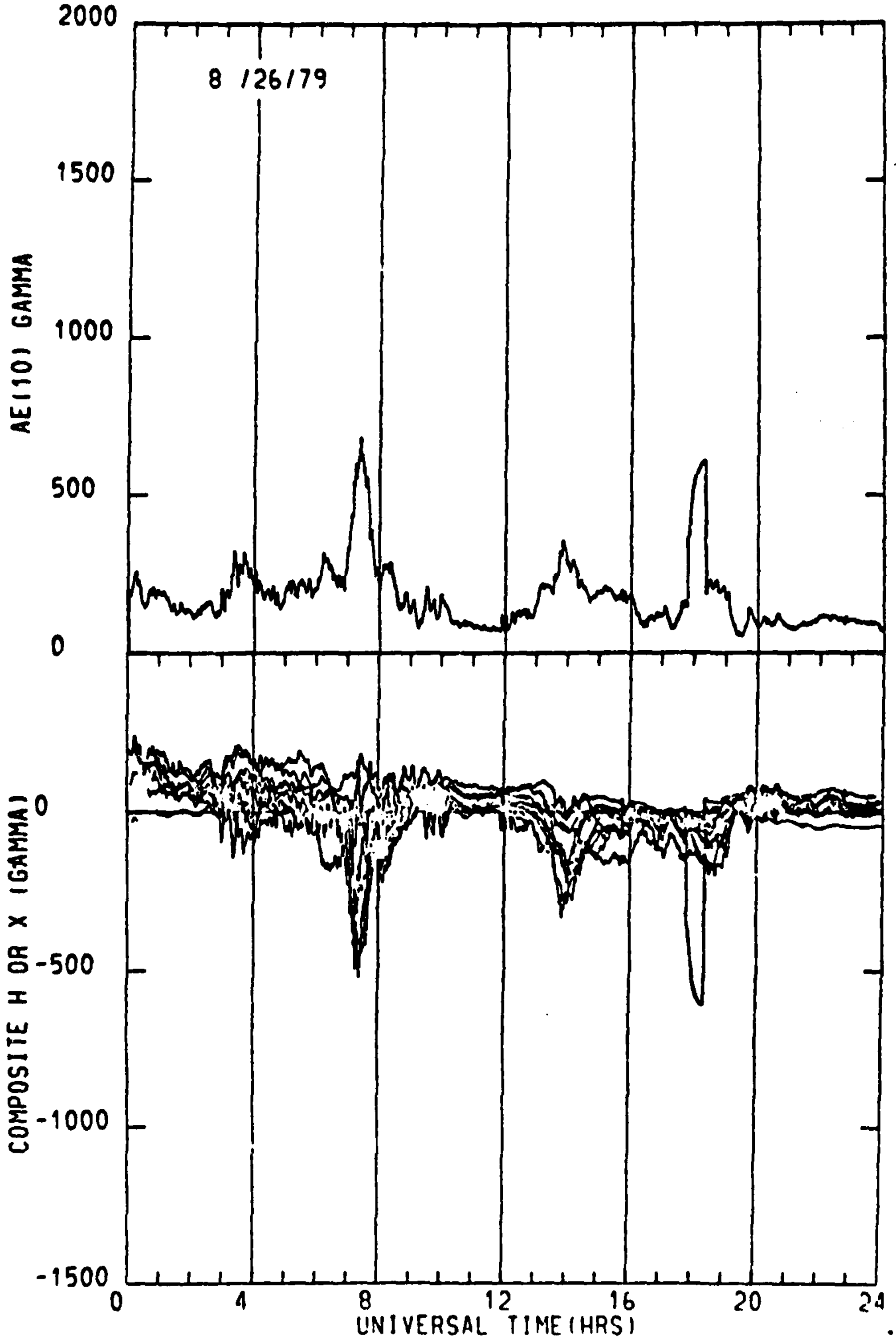


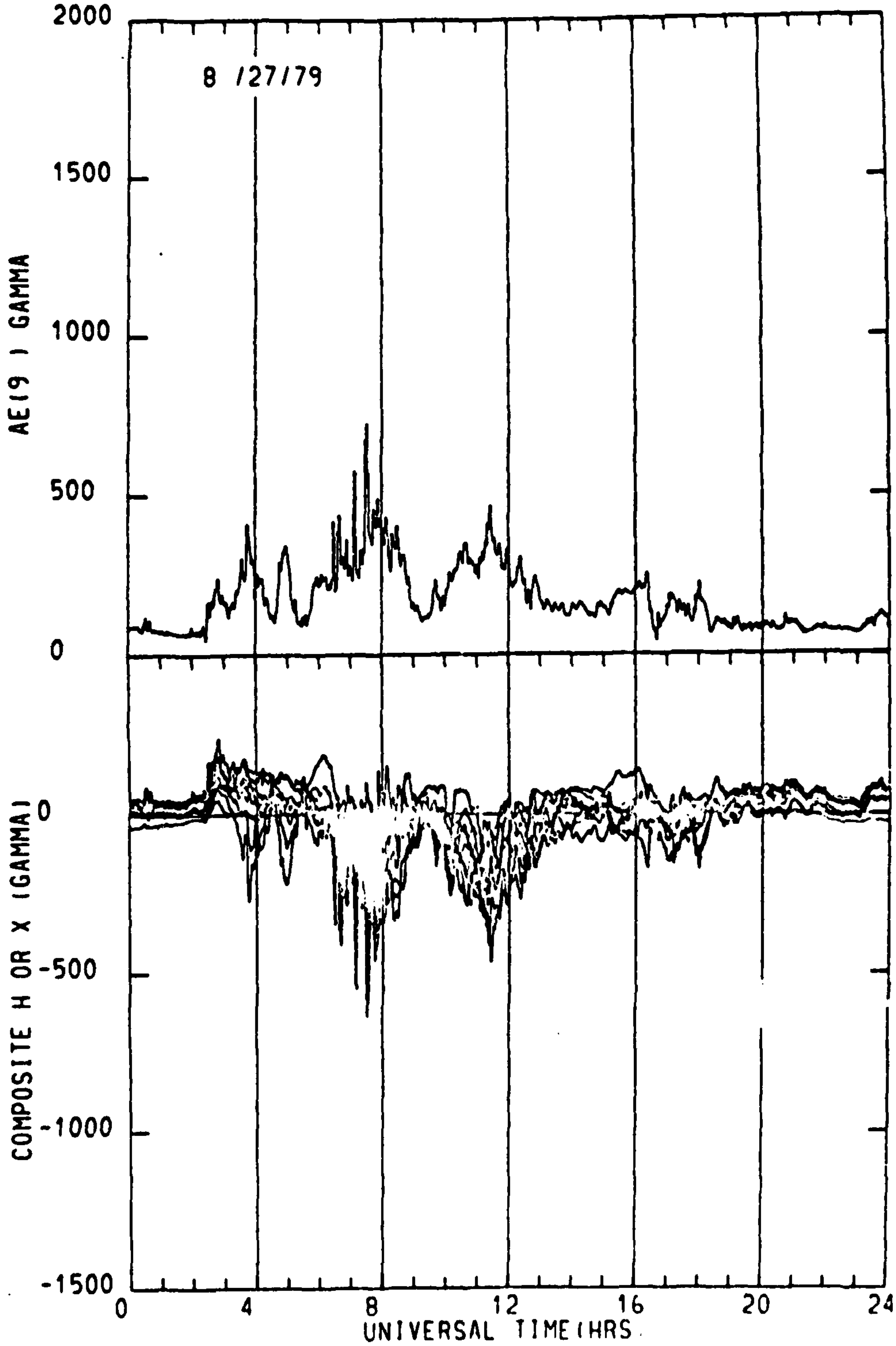
8 /23/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

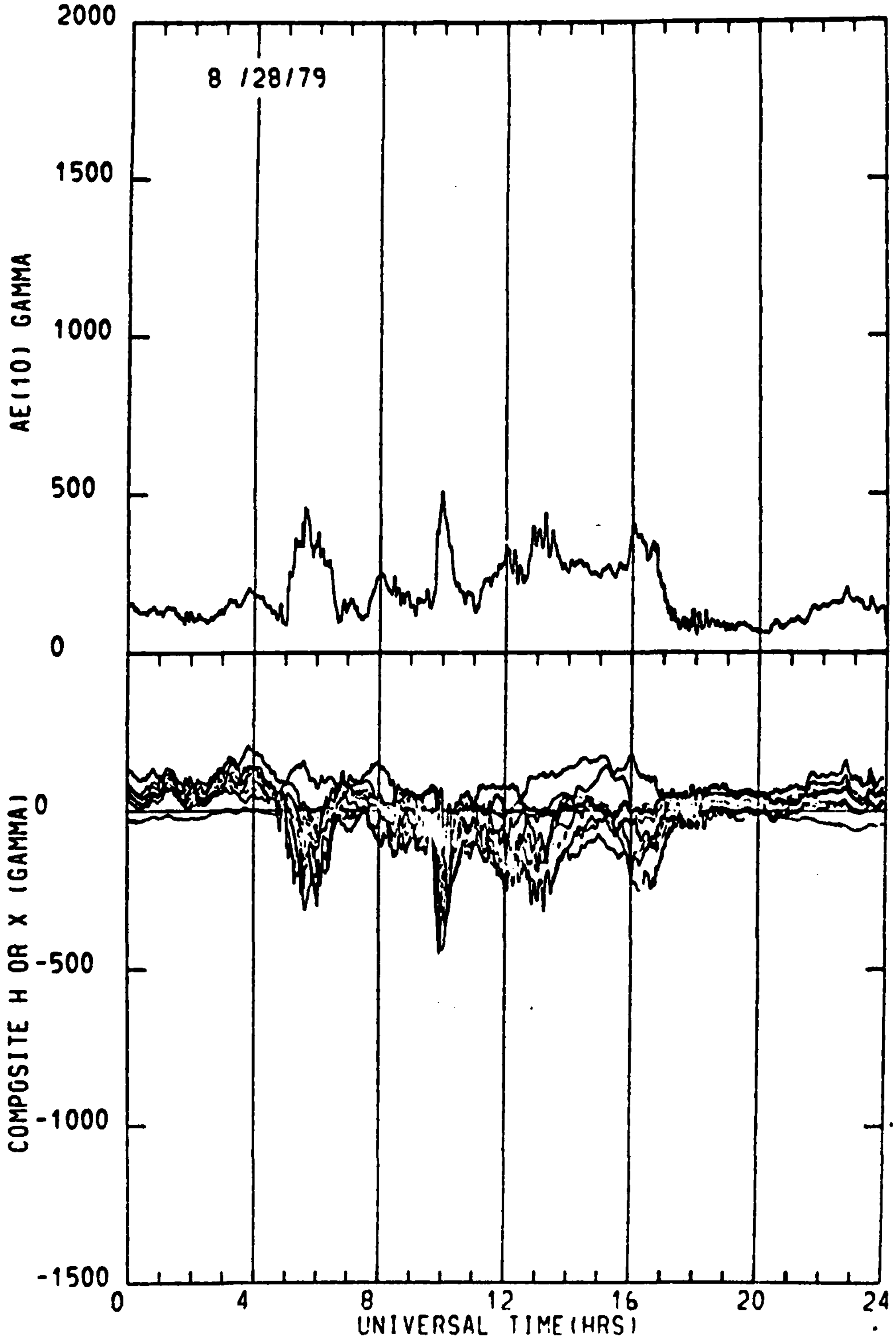

8 /24/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



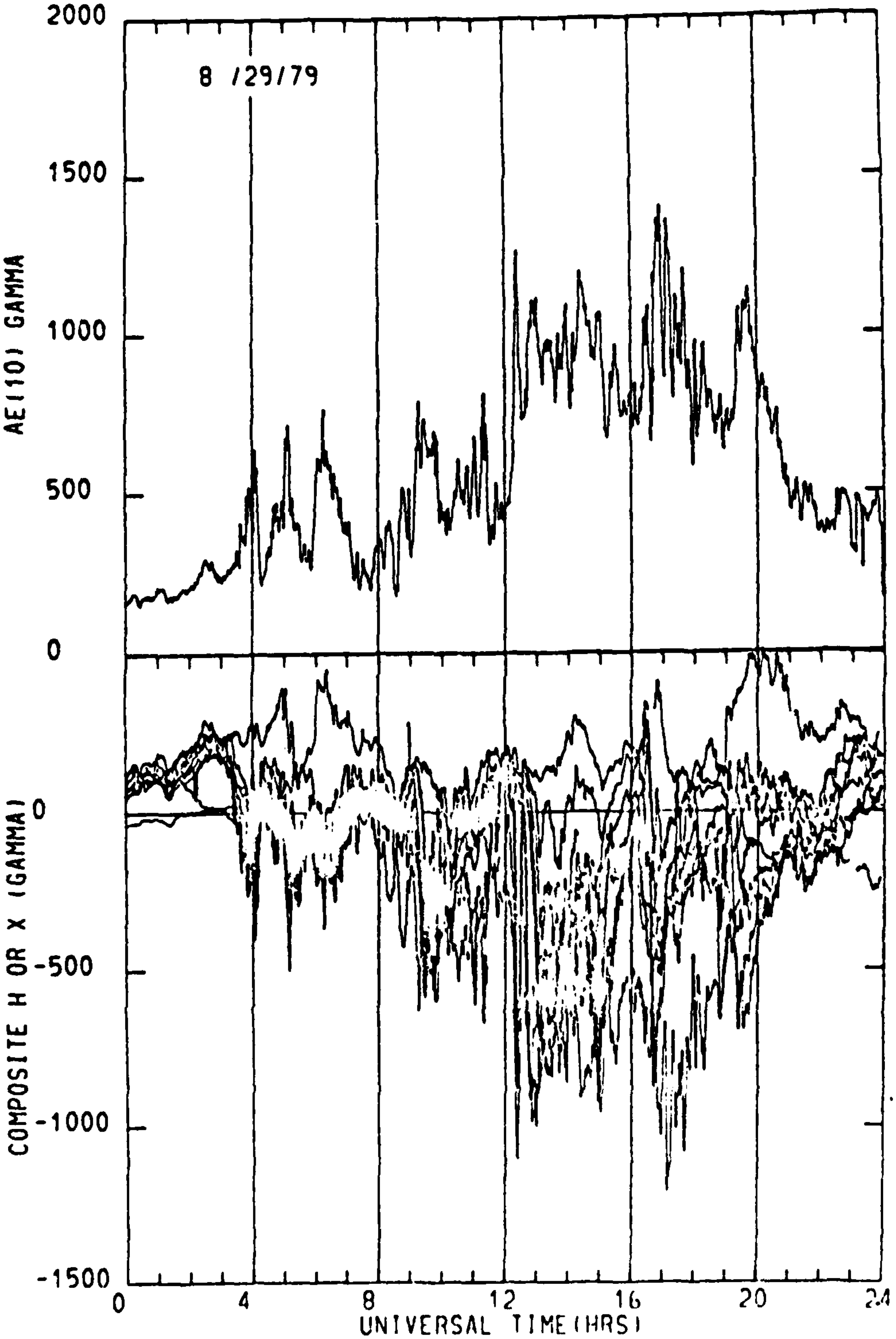
8 /25/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

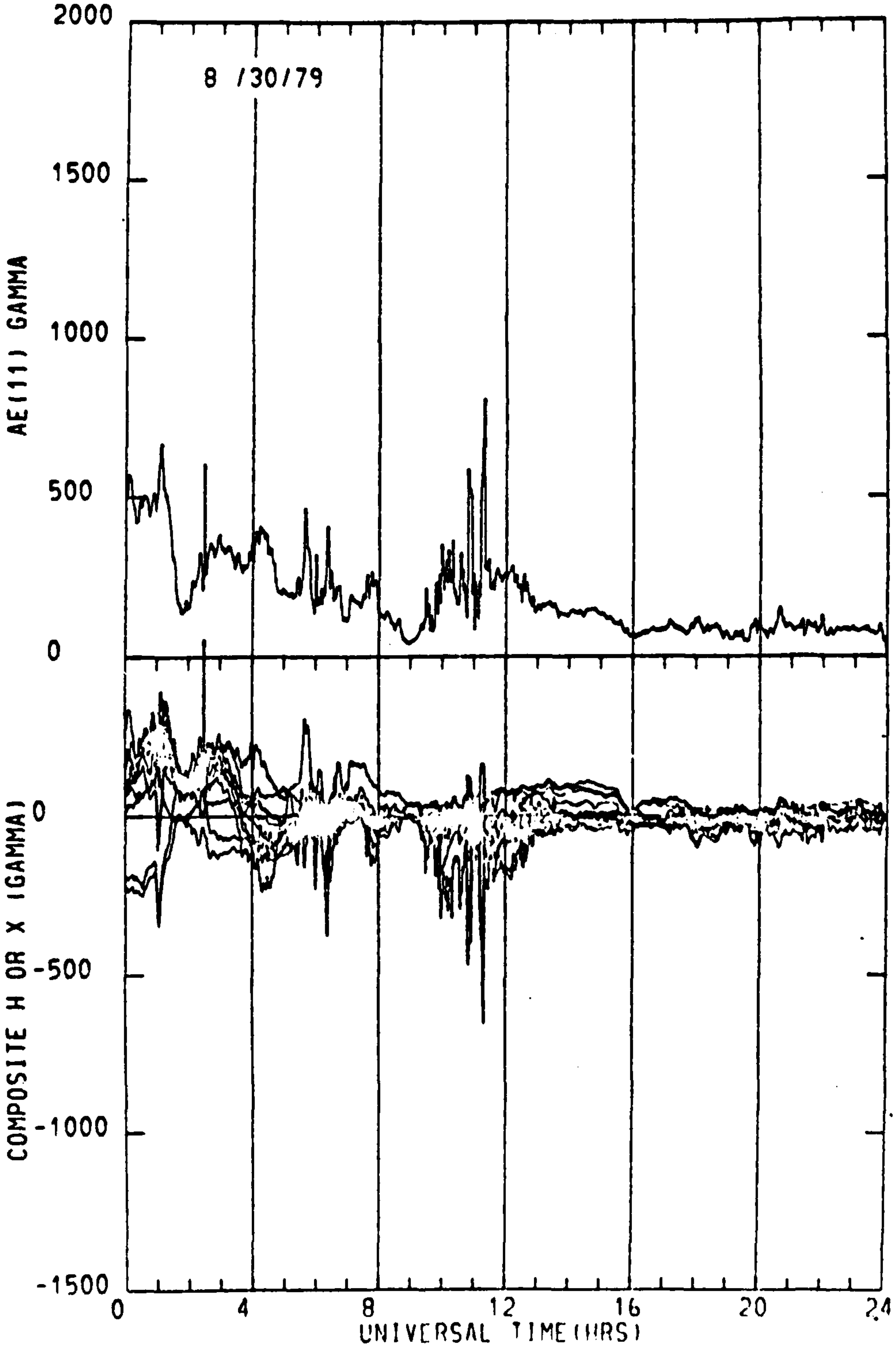

8 /26/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

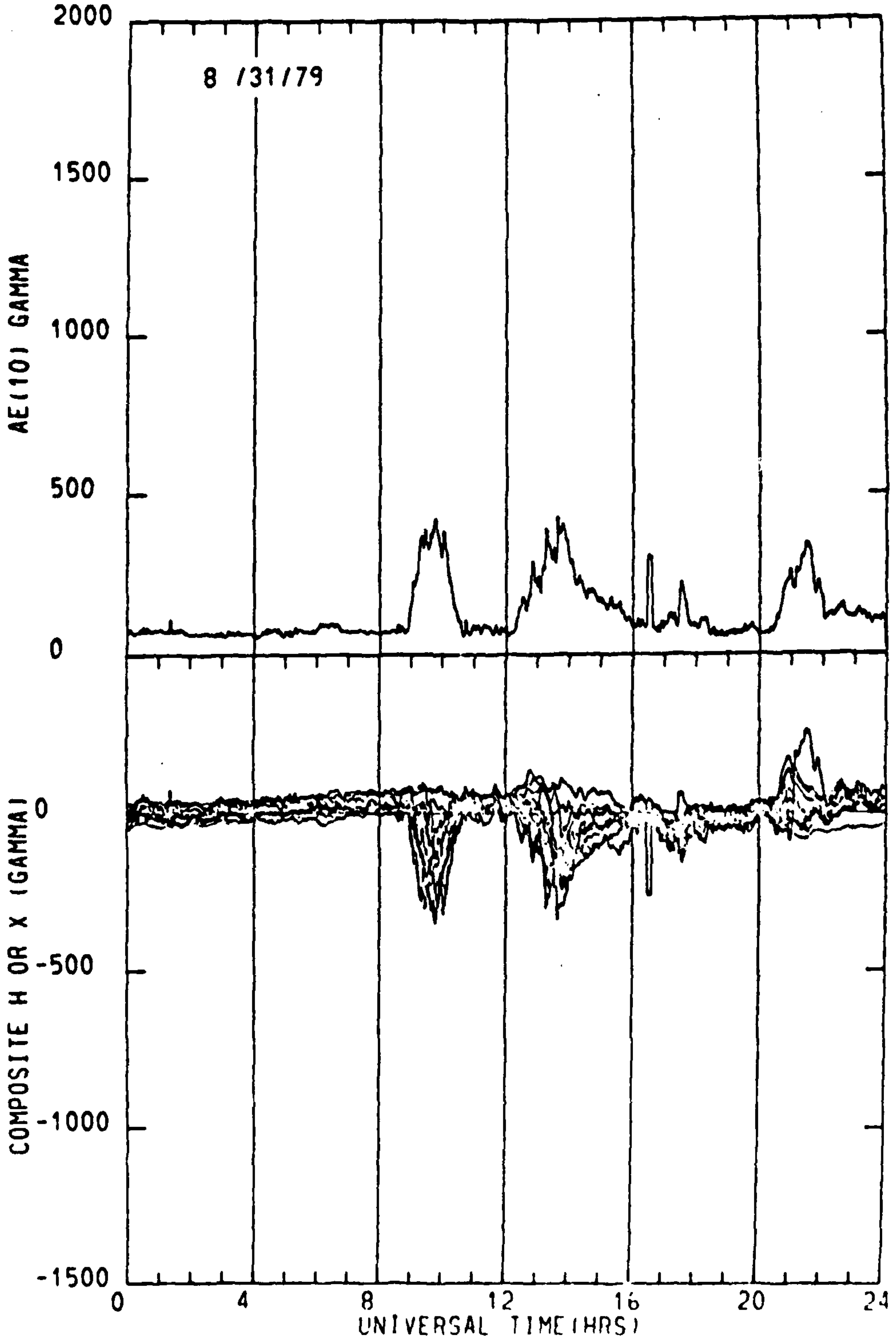

8 /27/79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



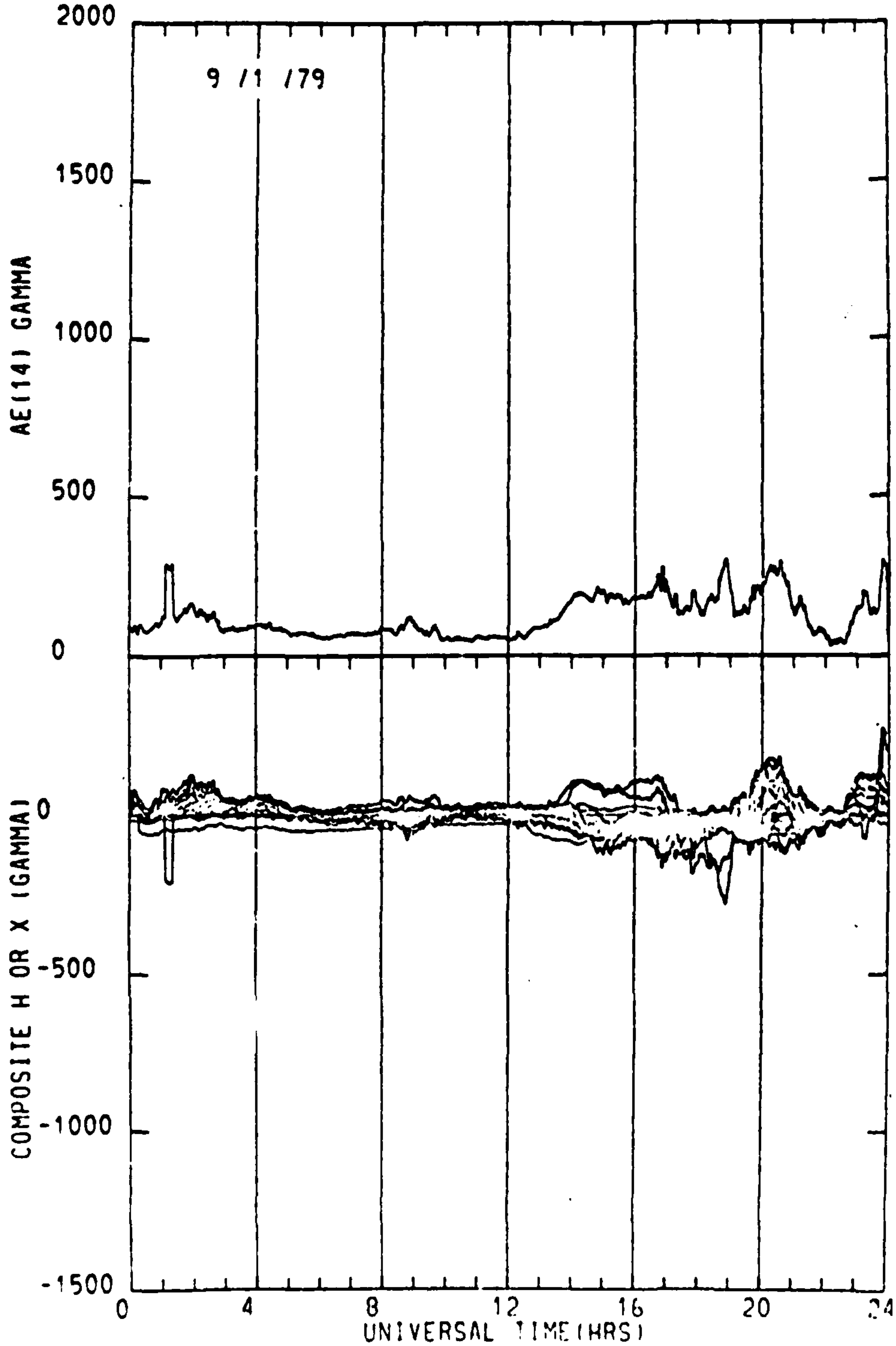
8 /28/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

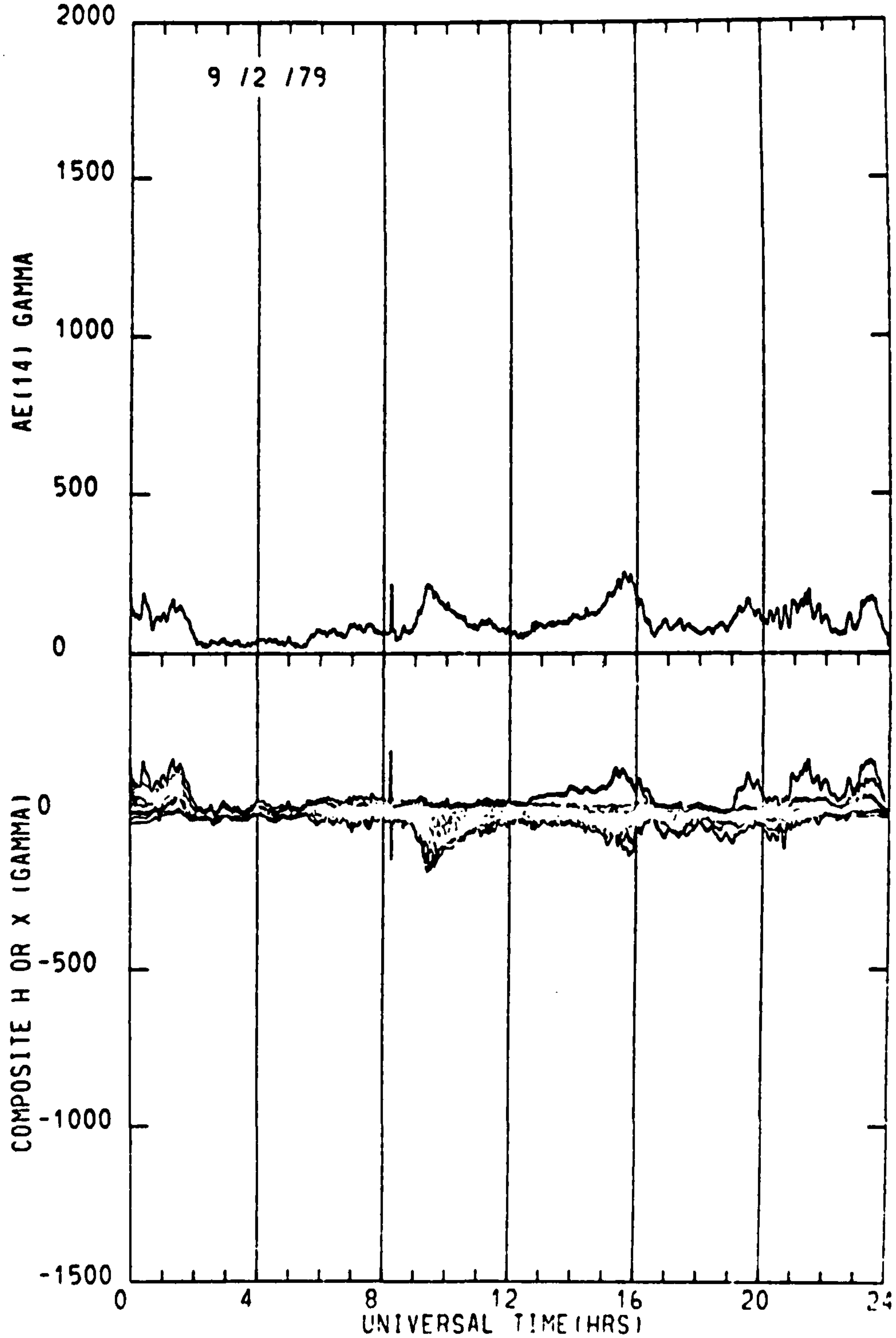

8 /29/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


8 /30/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

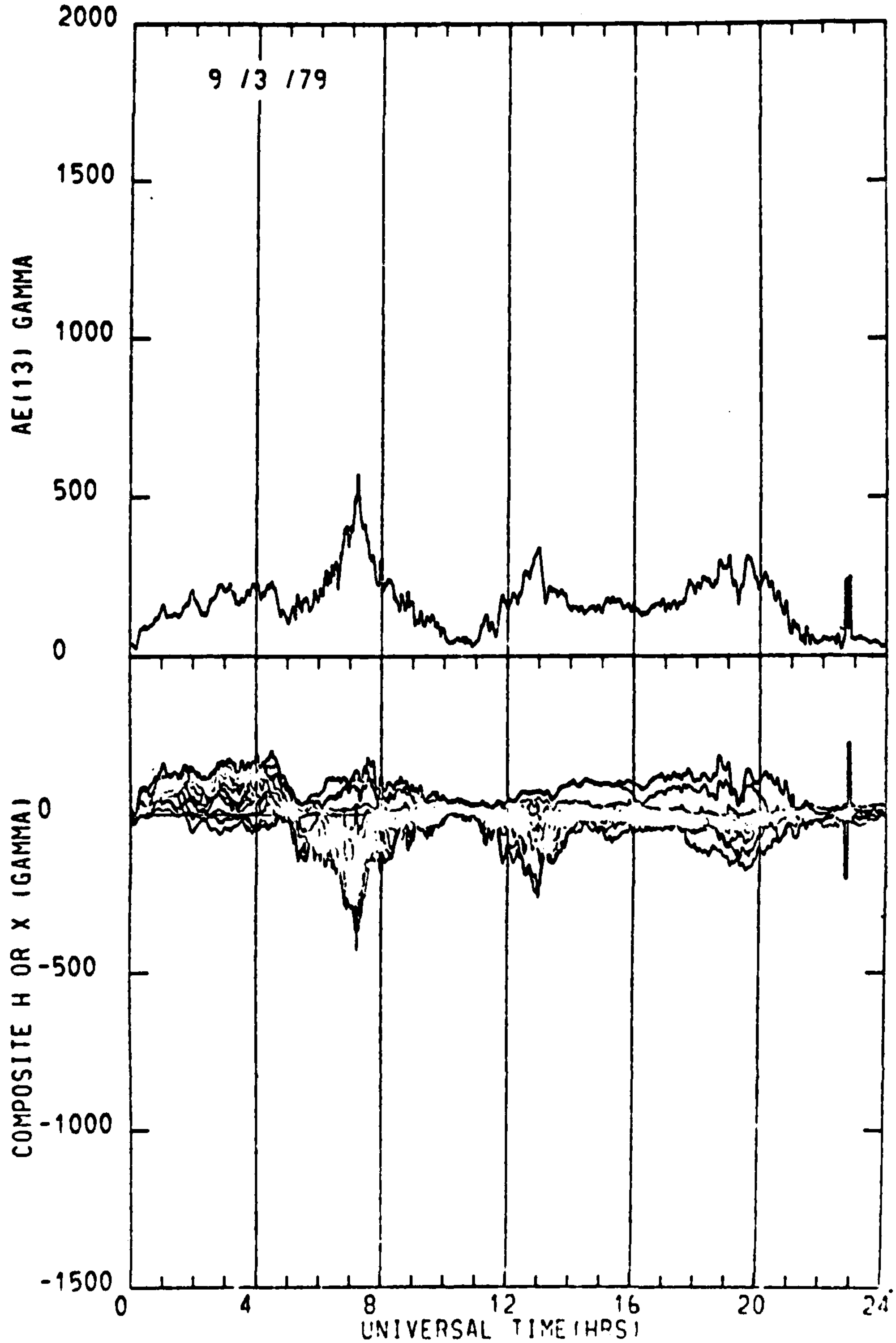


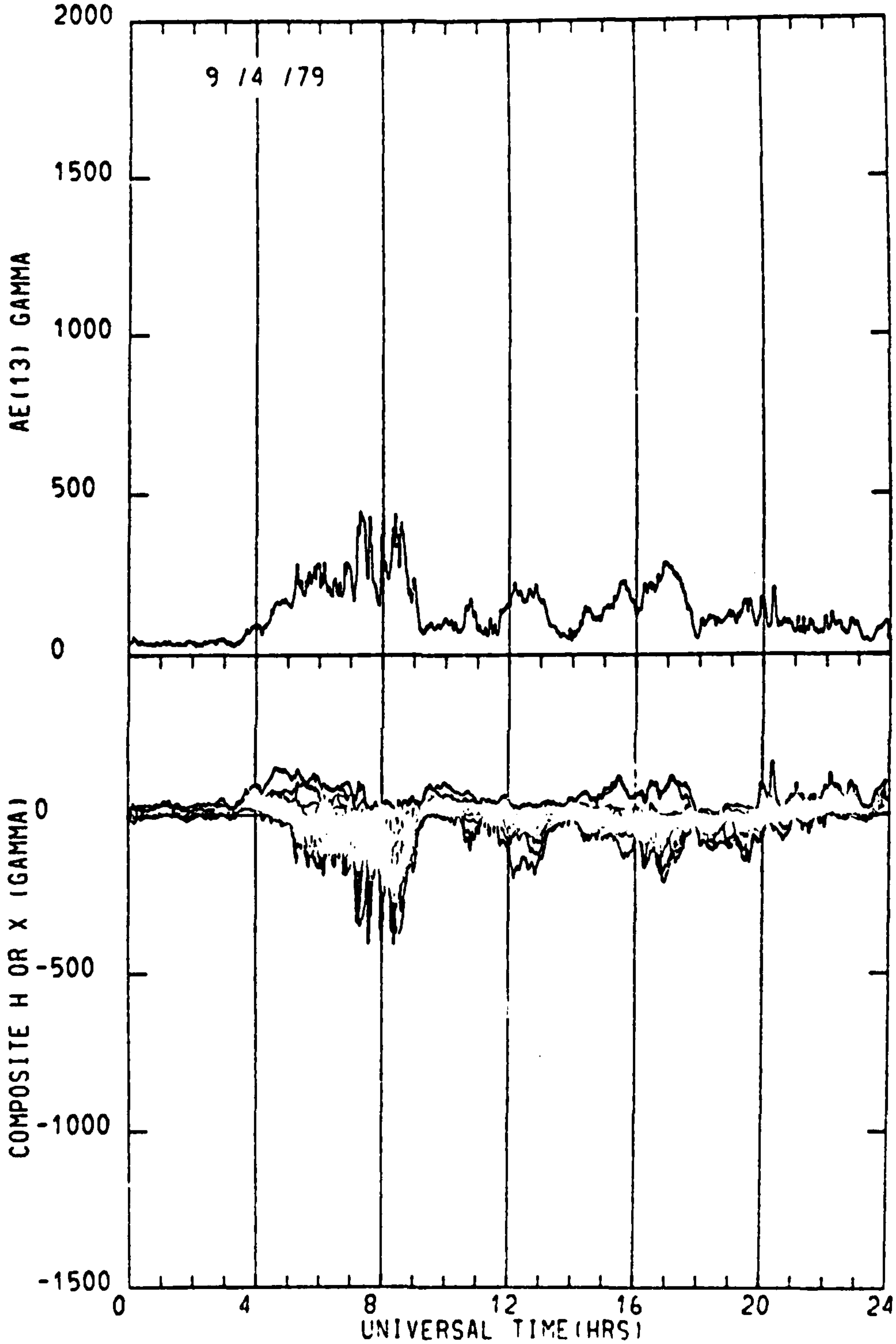
8 /31/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

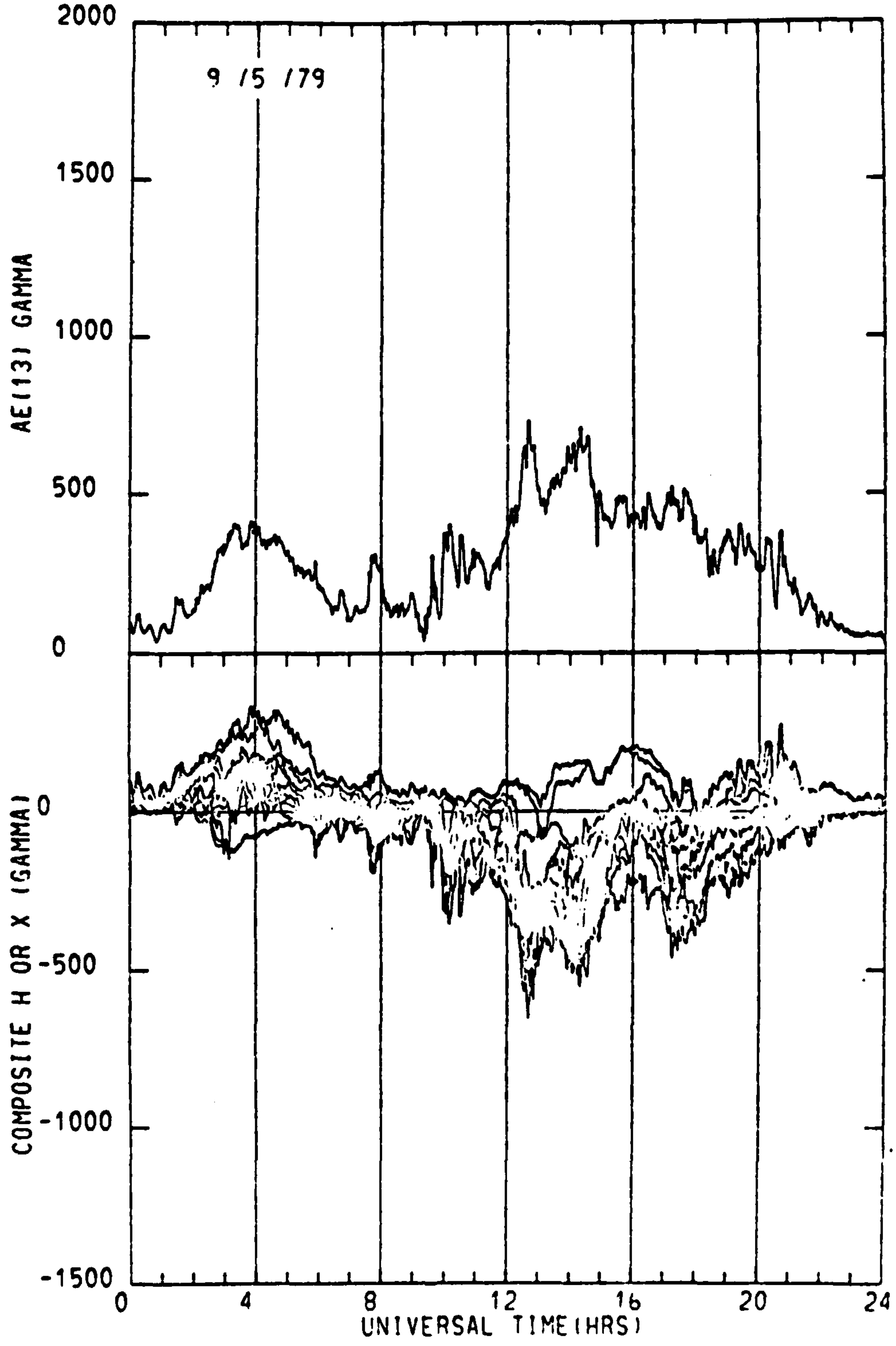

9 /1 /79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

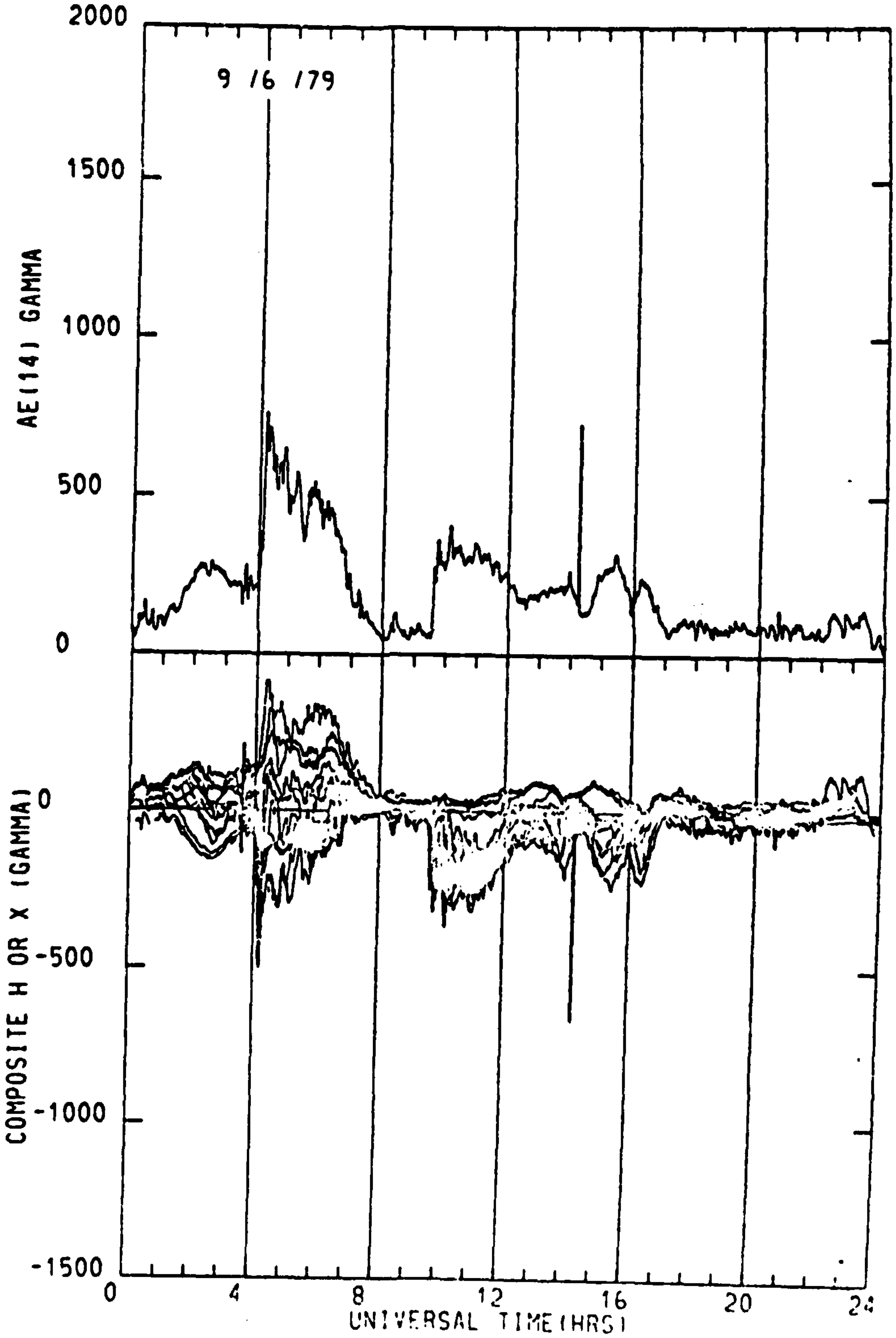


9 /2 /79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

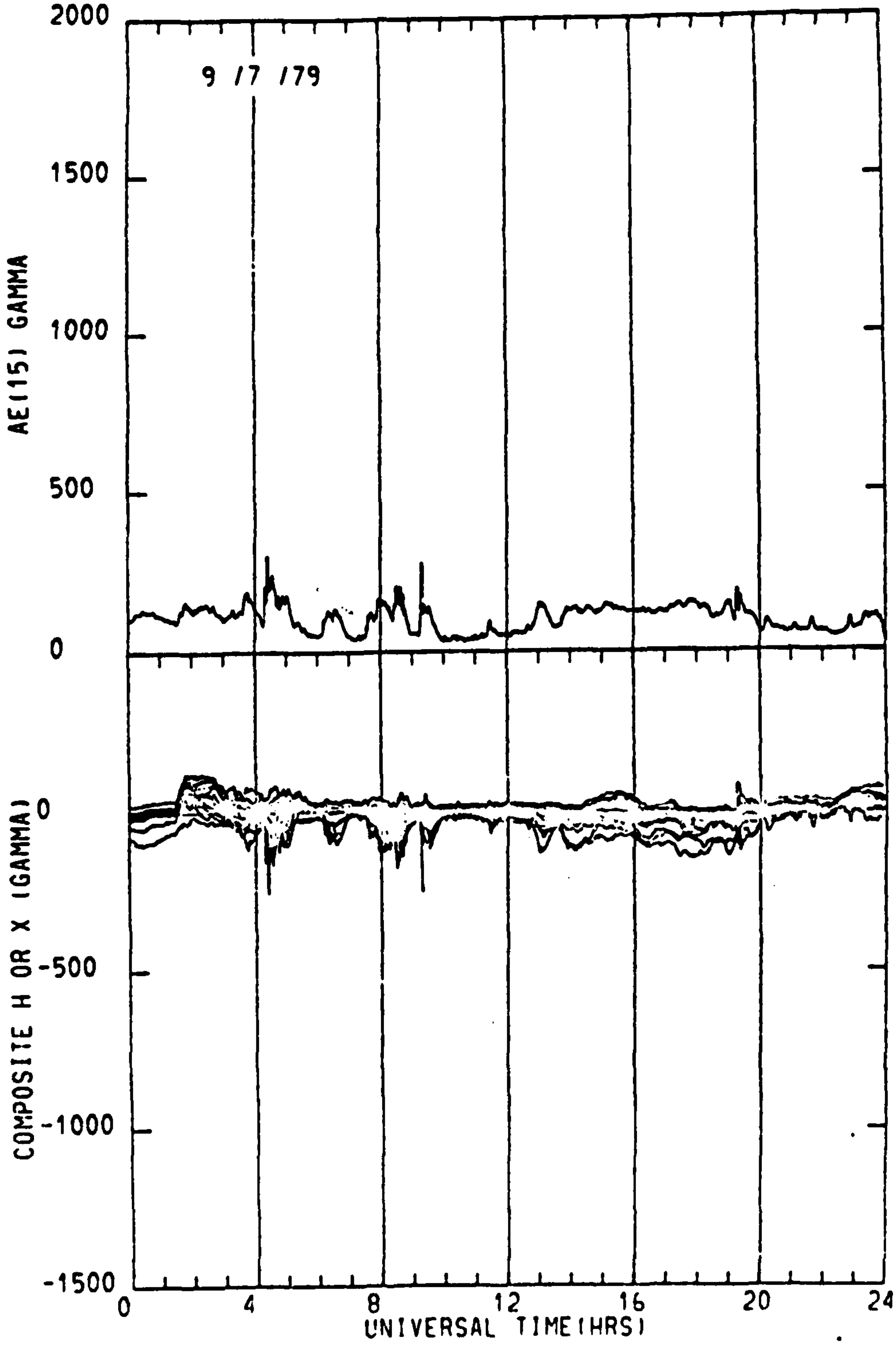

9 /3 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

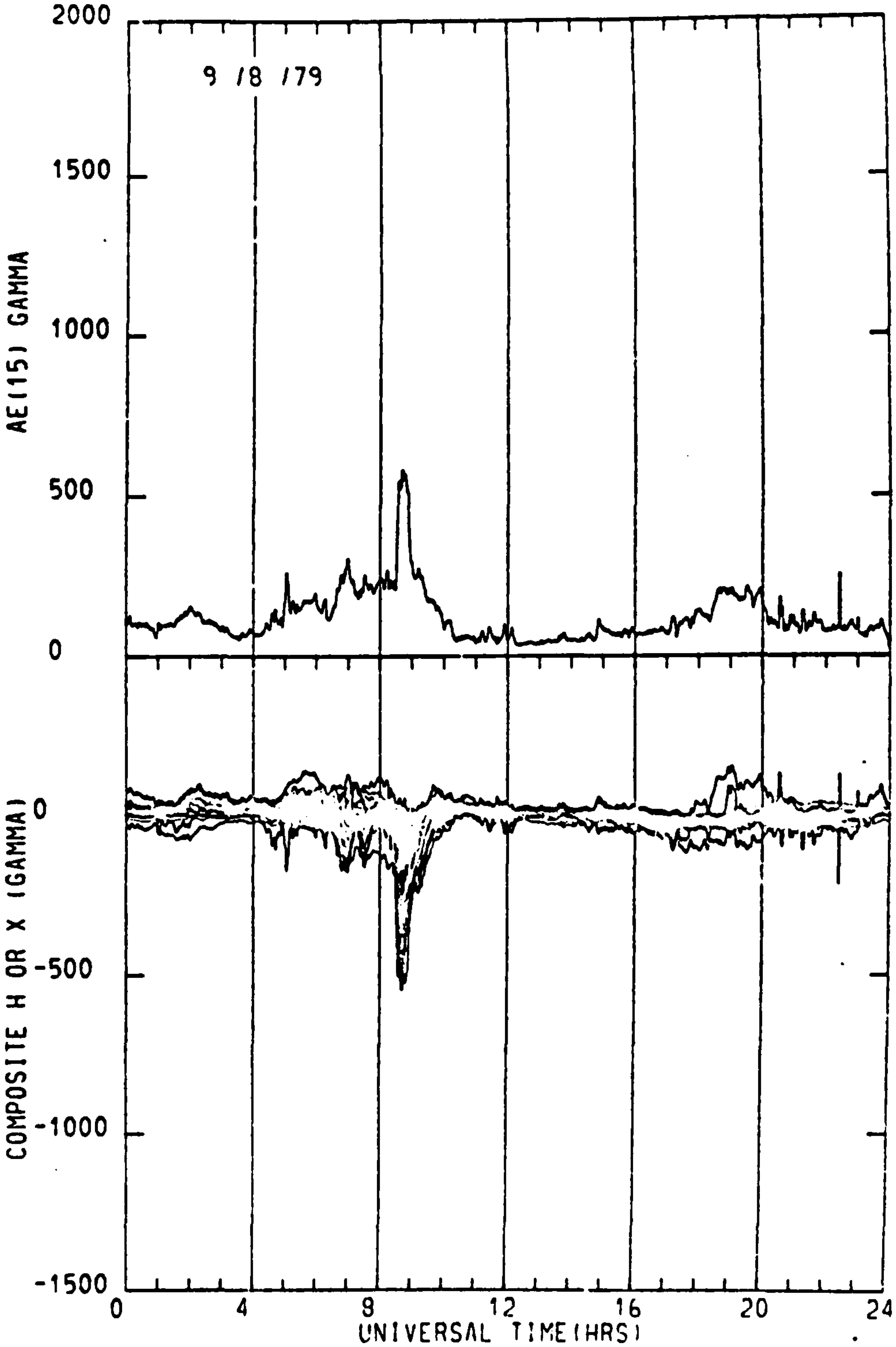

9 /4 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

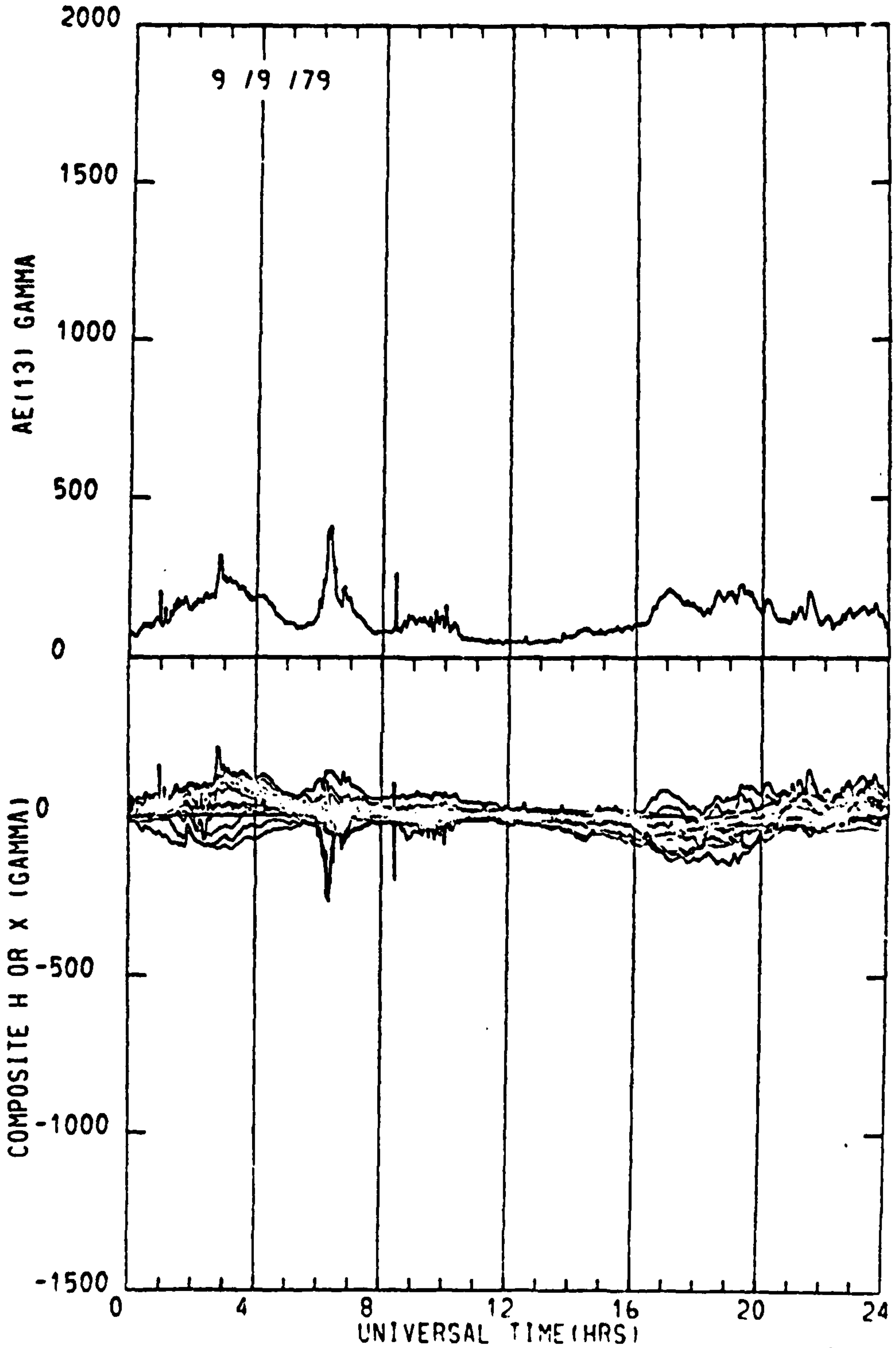

9 /5 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

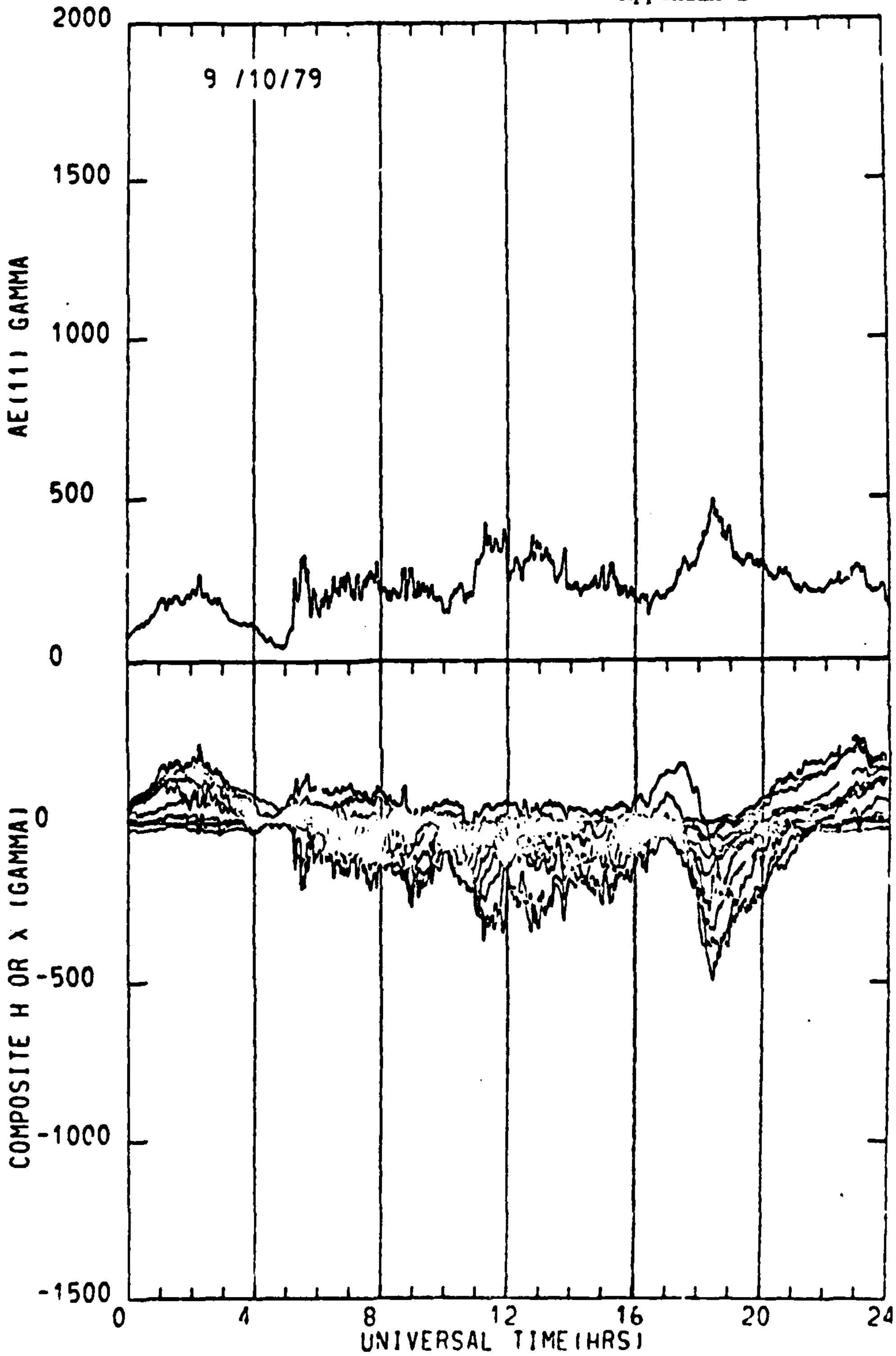


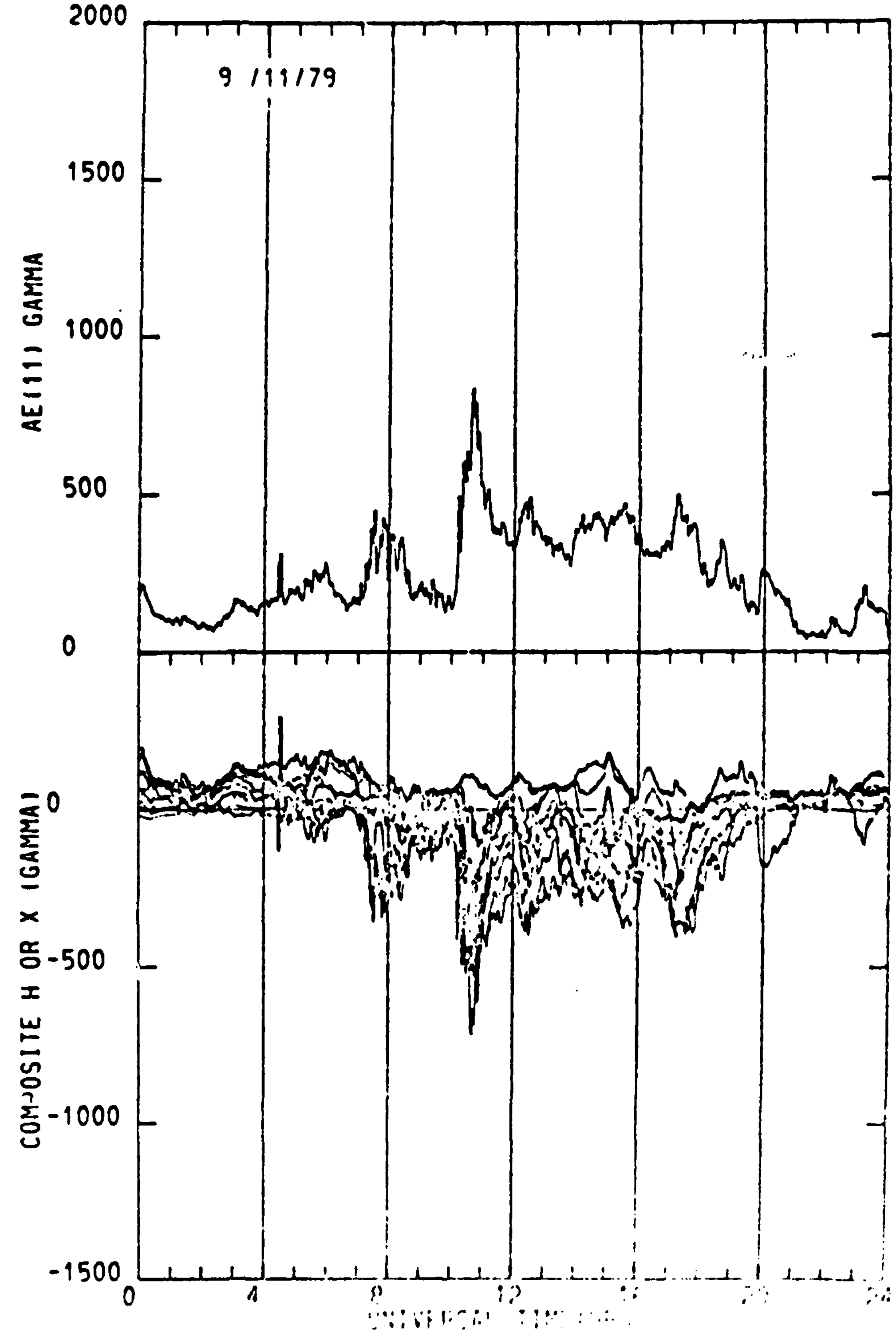
9 /6 /79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

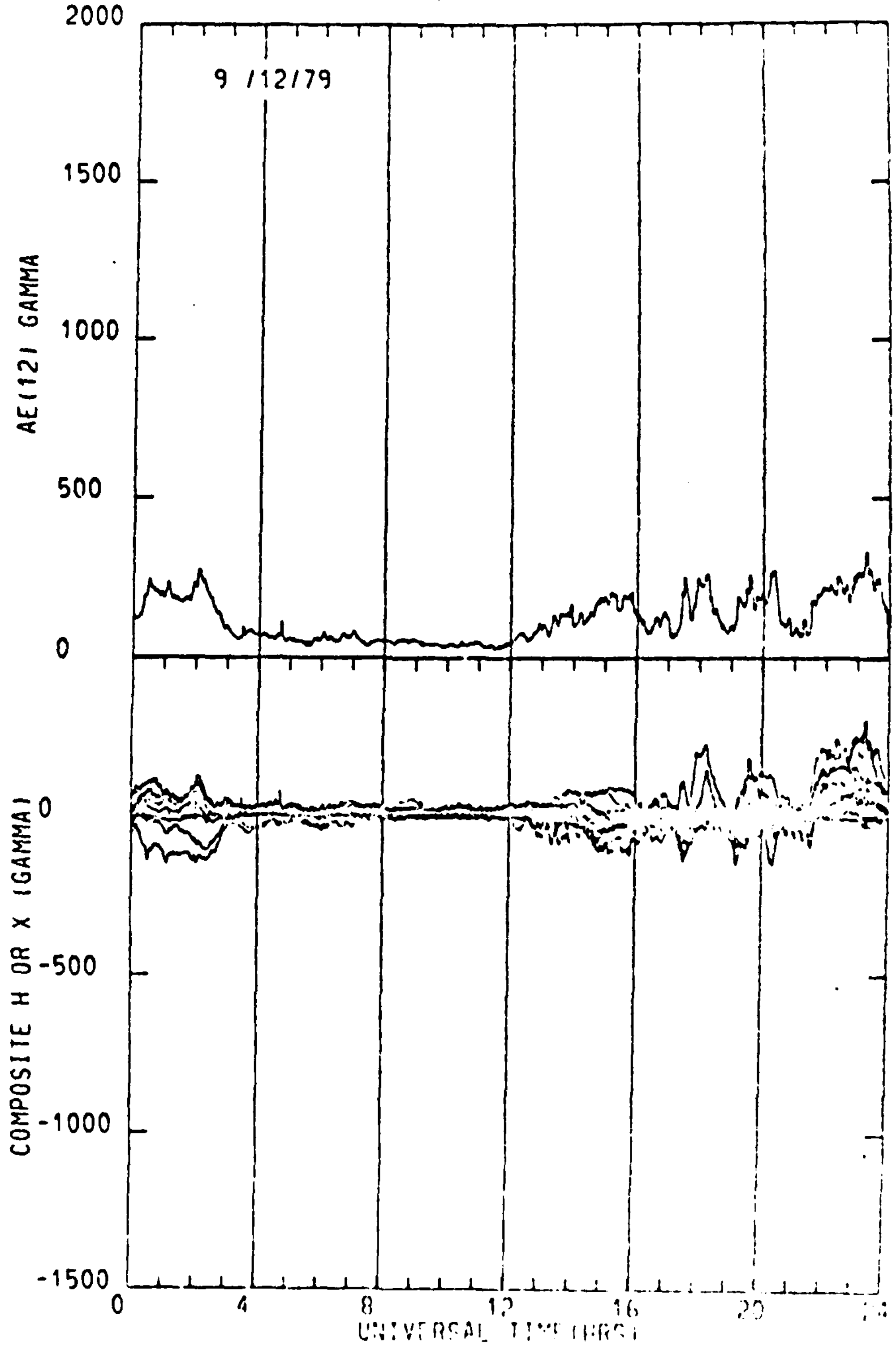

9 /7 /79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

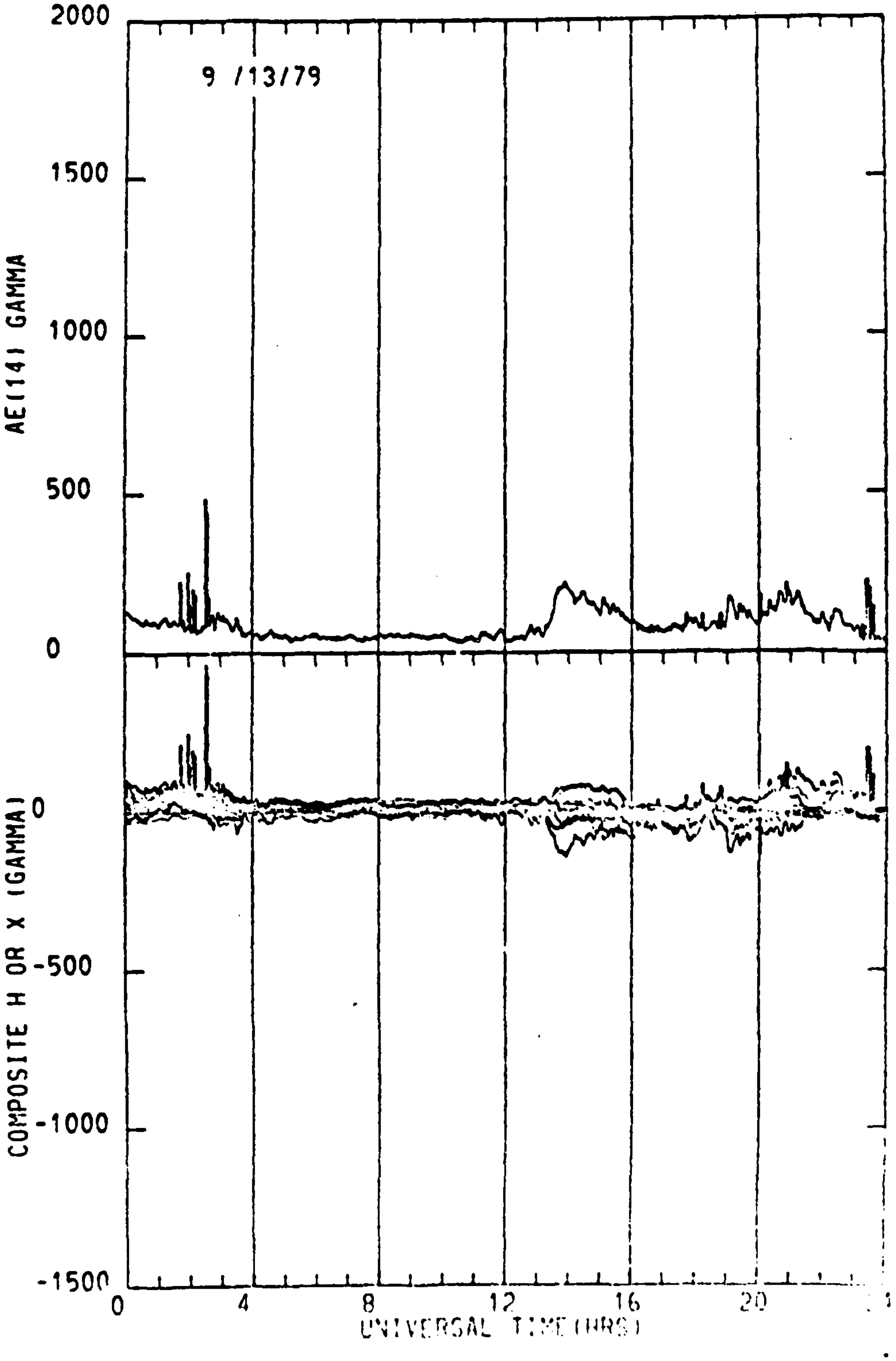

9 /8 /79
2000
1500
1000
500
0
AE(15) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

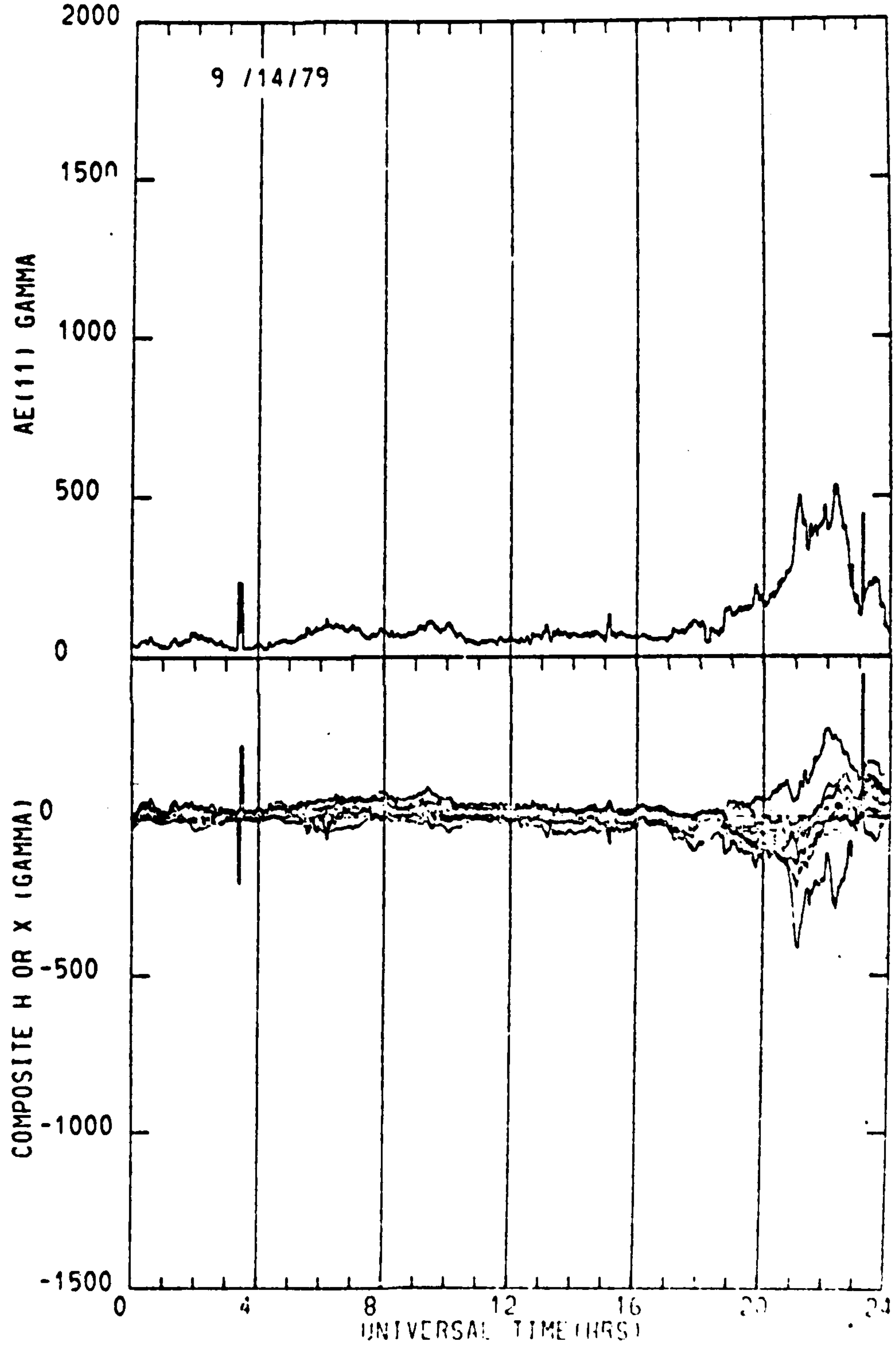

9 /9 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


9 /10/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


9 /11/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4

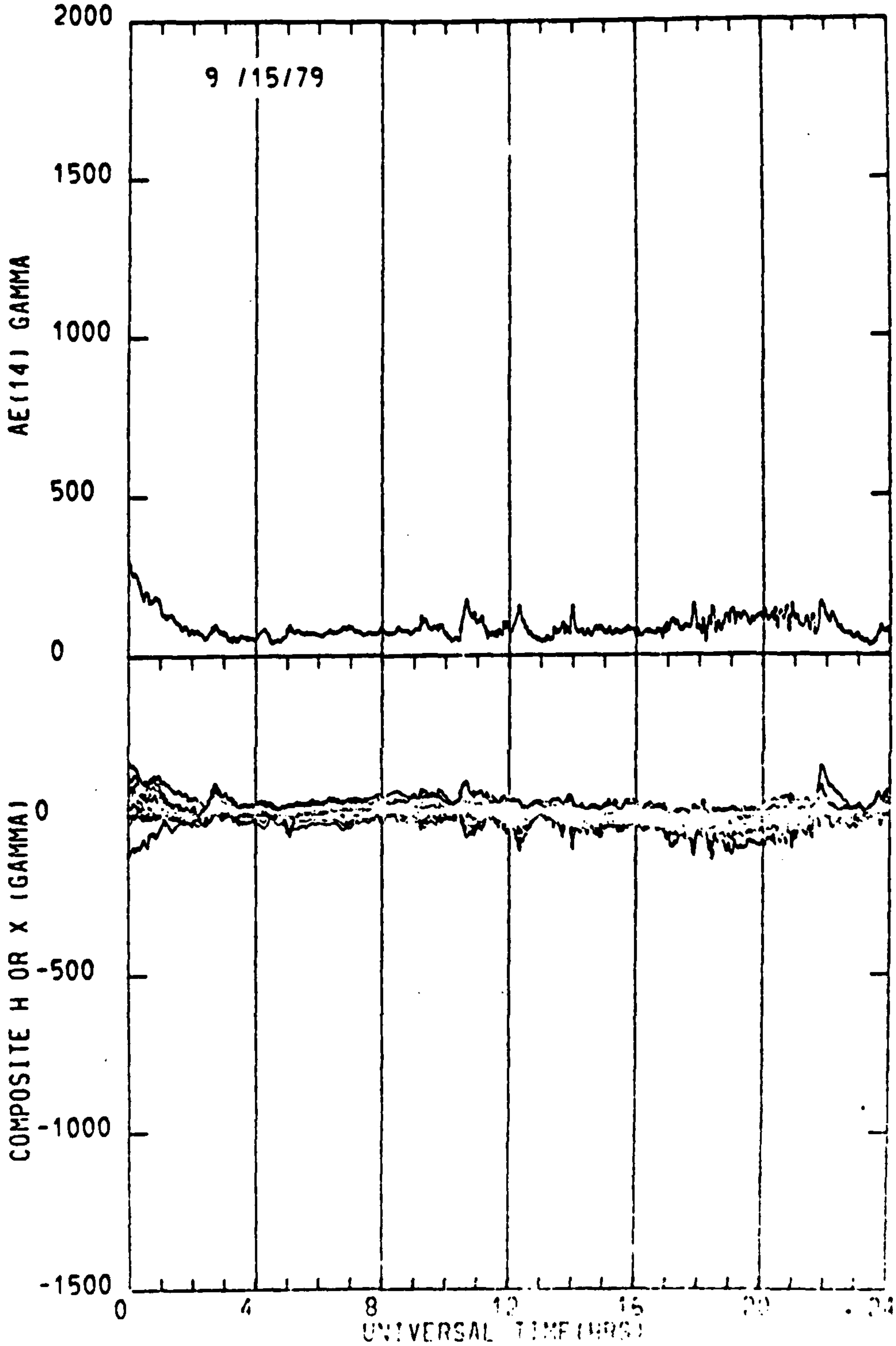

2000
9 /12/79
1500
AE(12) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

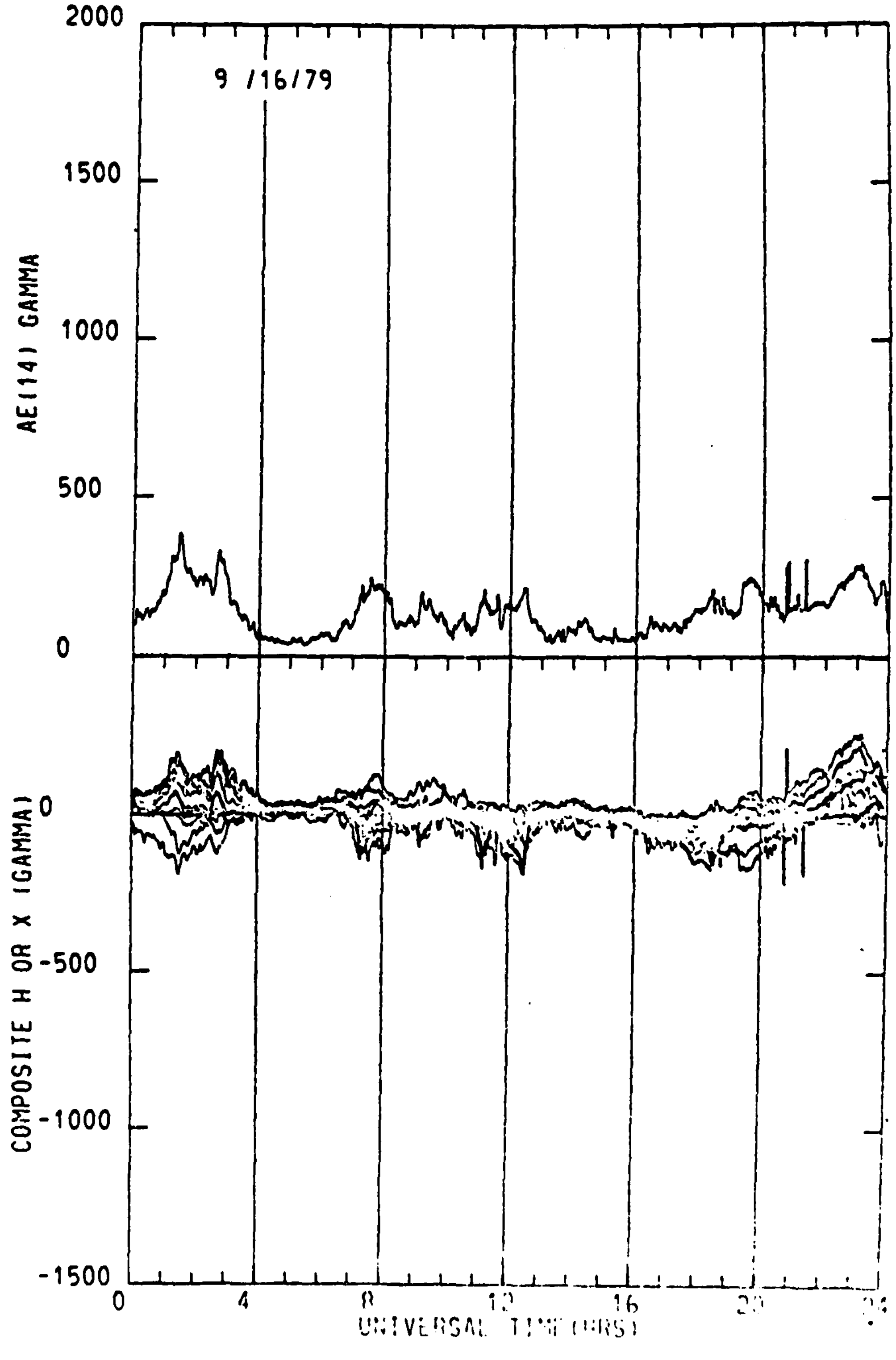

9 /13/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

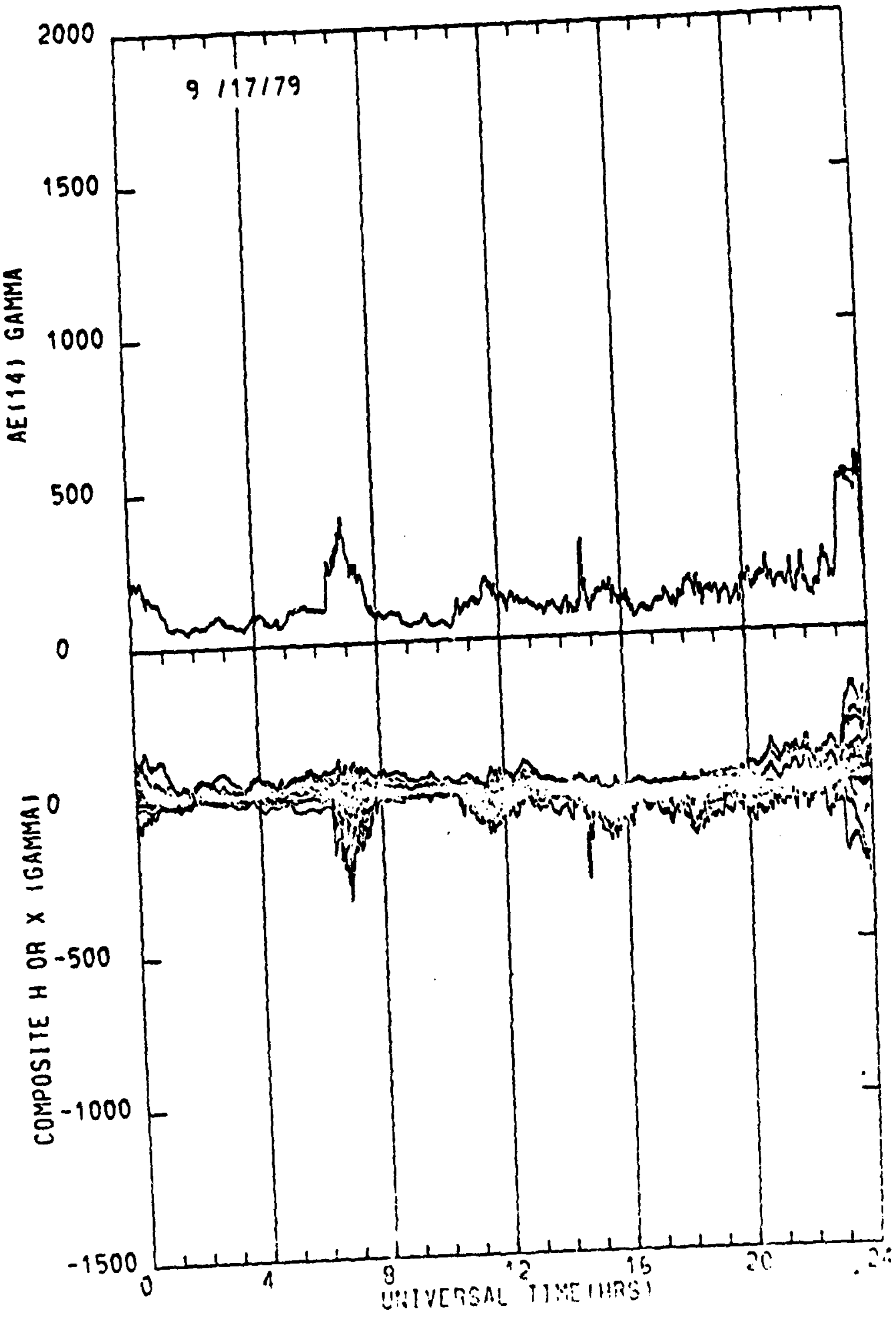

9 /14/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

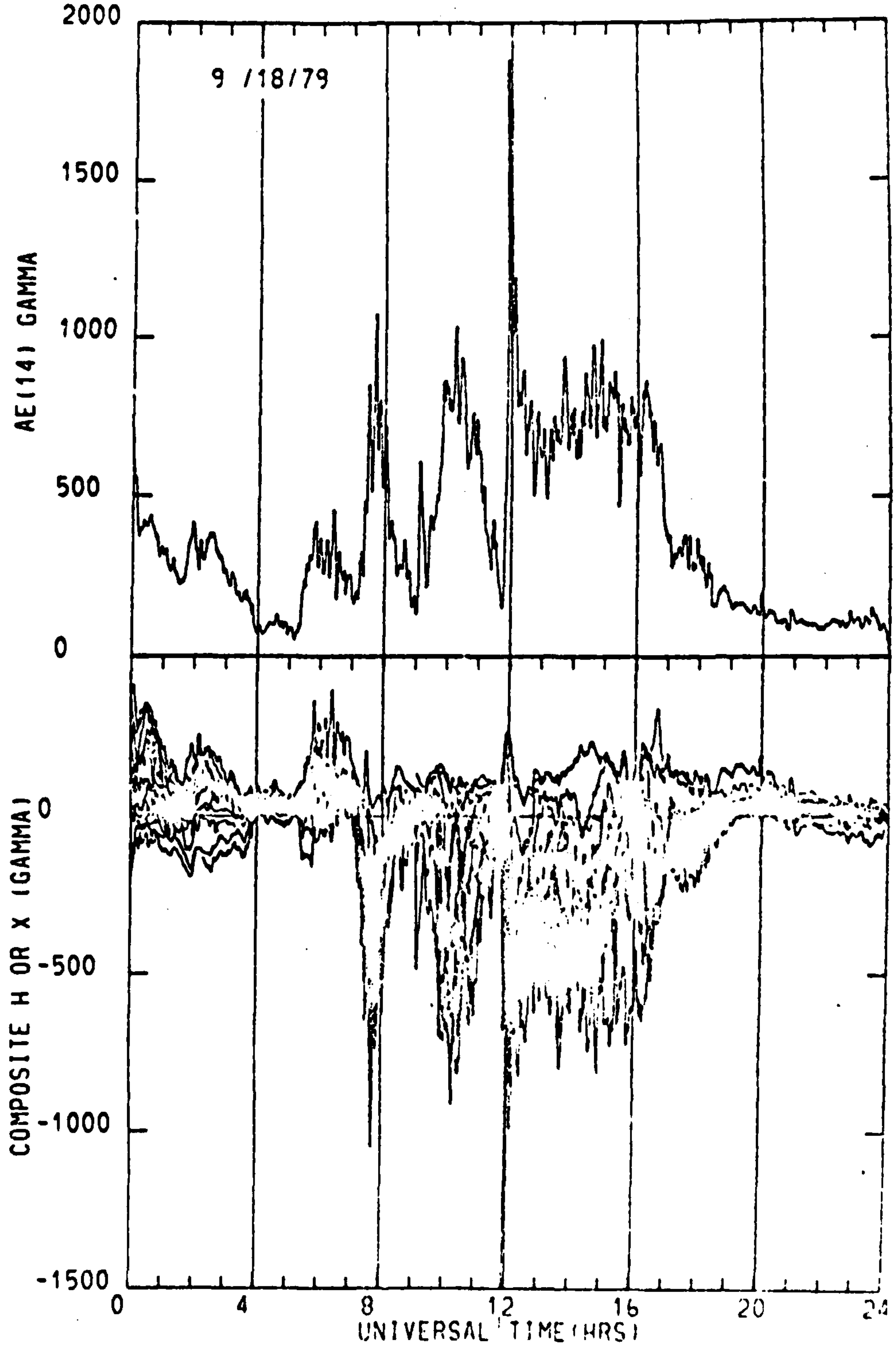
AD-A104 109 JOHNS HOPKINS UNIV LAUREL MD APPLIED PHYSICS LAB F/G 8/14
MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (--ETC(U)
DEC 80 C MENG MIPR-FY71218000009
UNCLASSIFIED AFGL-TR-81-0104 NL

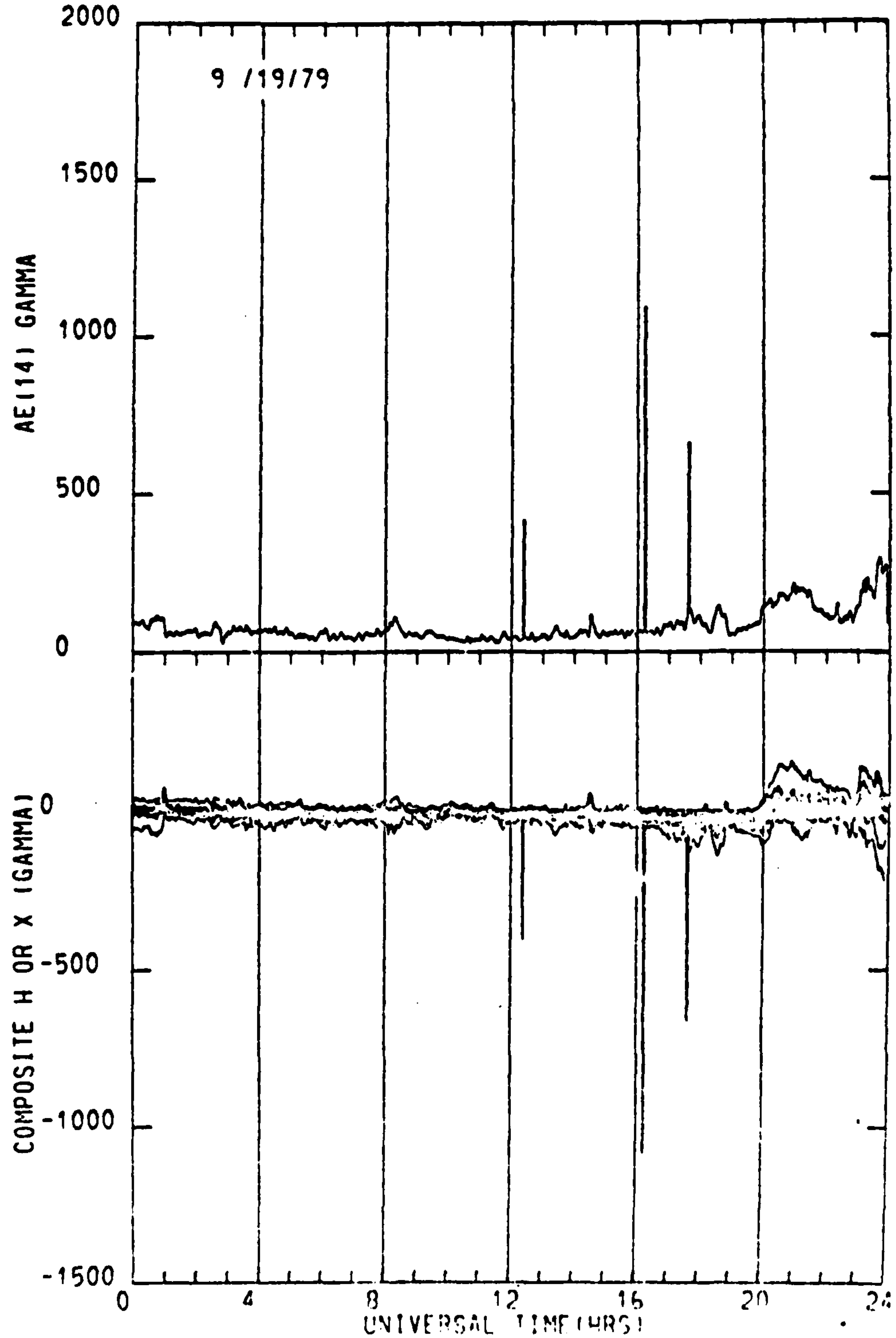
4 OF 5
AD
A104109

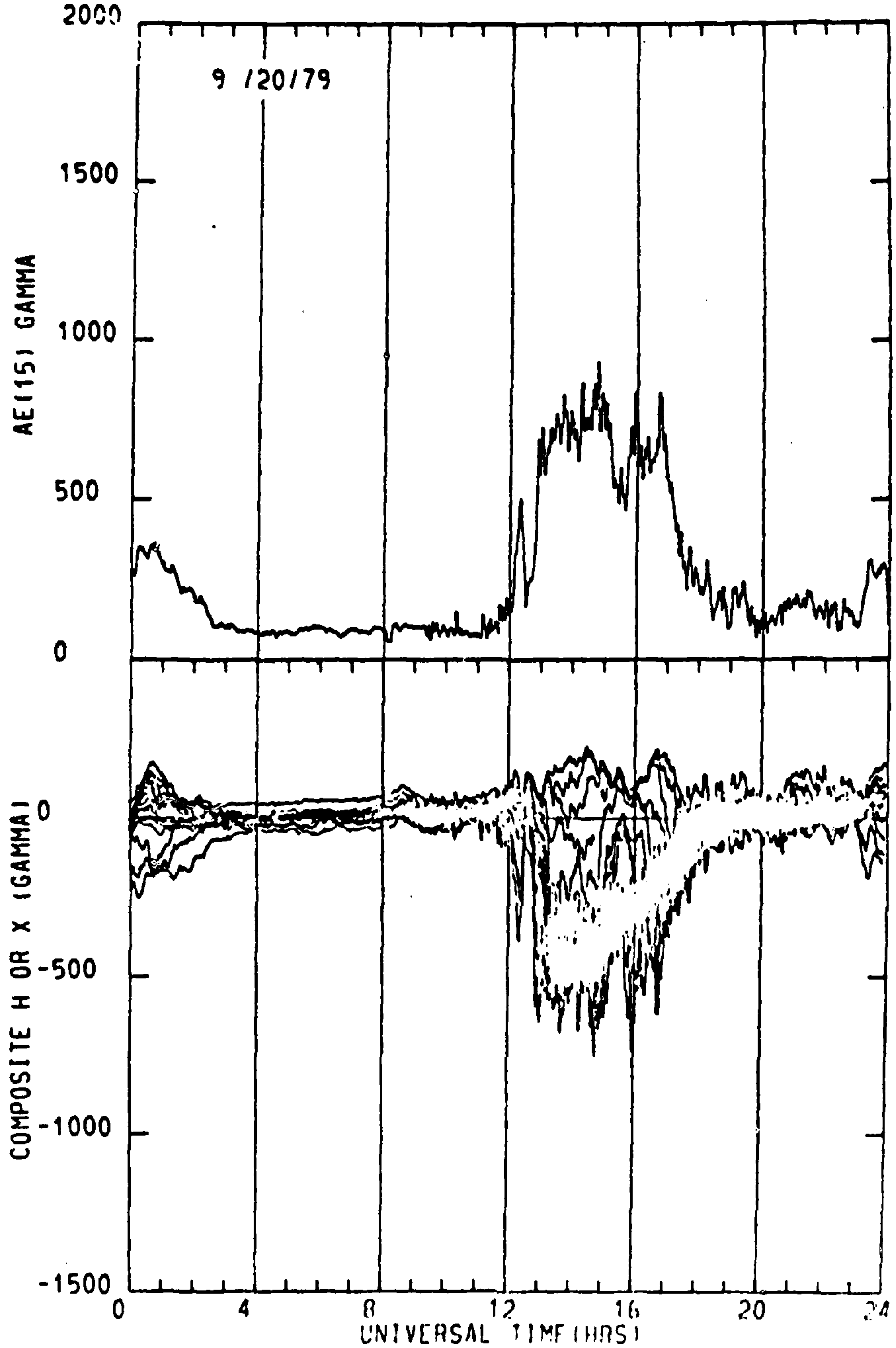

9 /15/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
UNIVERSAL TIME(HRS)


9 /16/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
16
UNIVERSAL TIME (HRS)

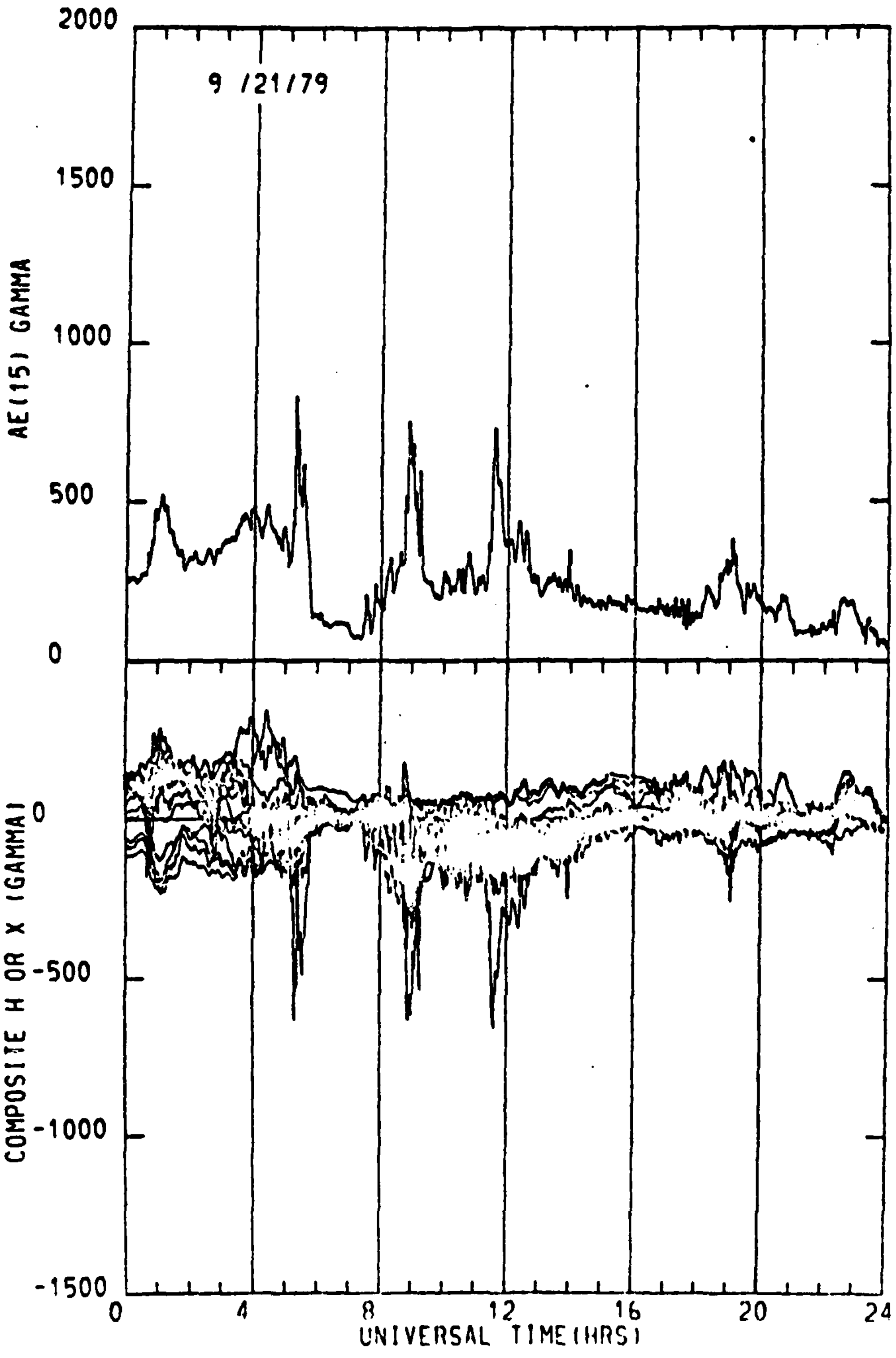

2000
1500
1000
500
0
AE(14) GAMMA
9 /17/79
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

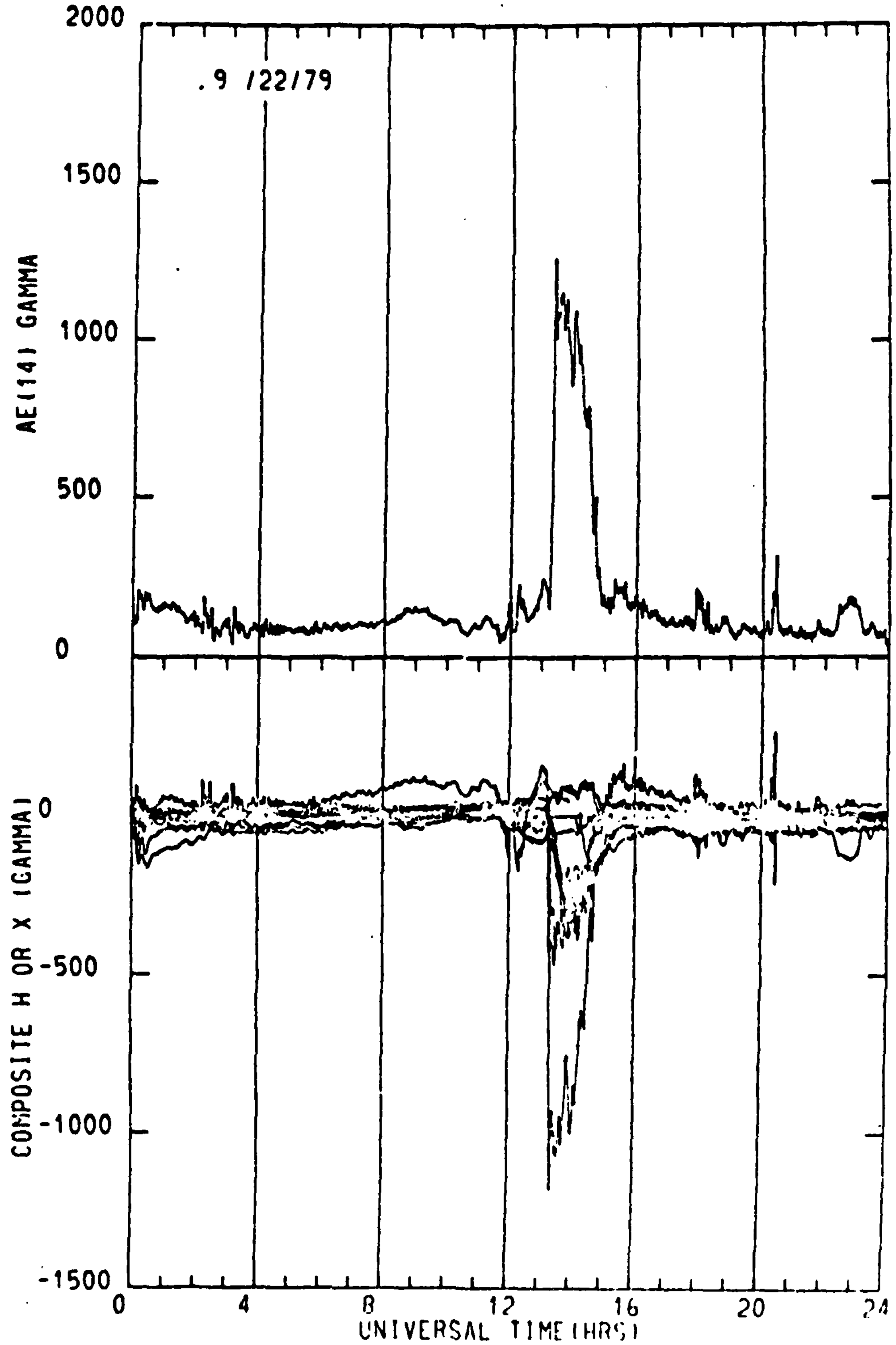

9 /18/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

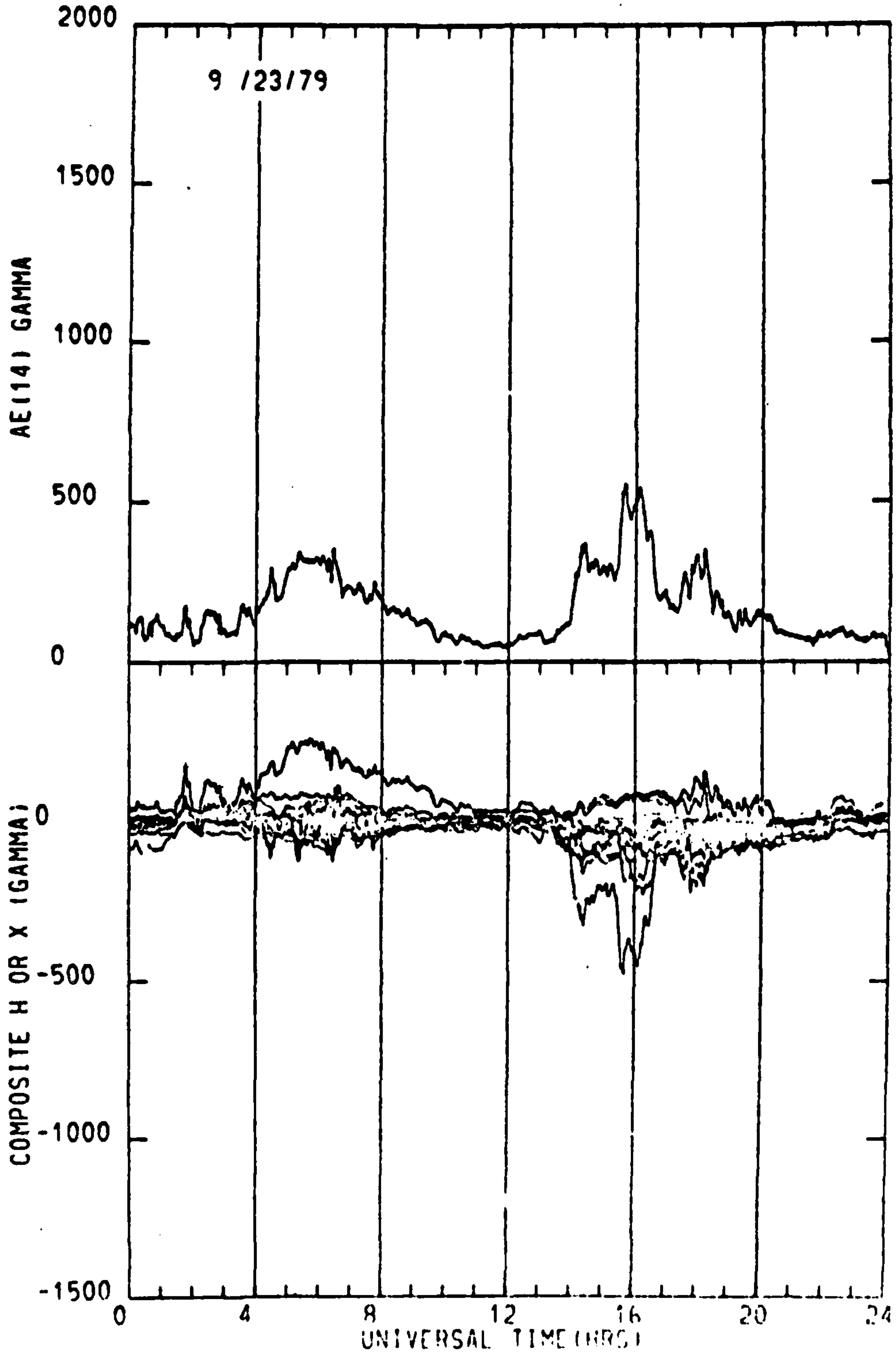

9 /19/79
2000
1500
1000
500
0
AE(14) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

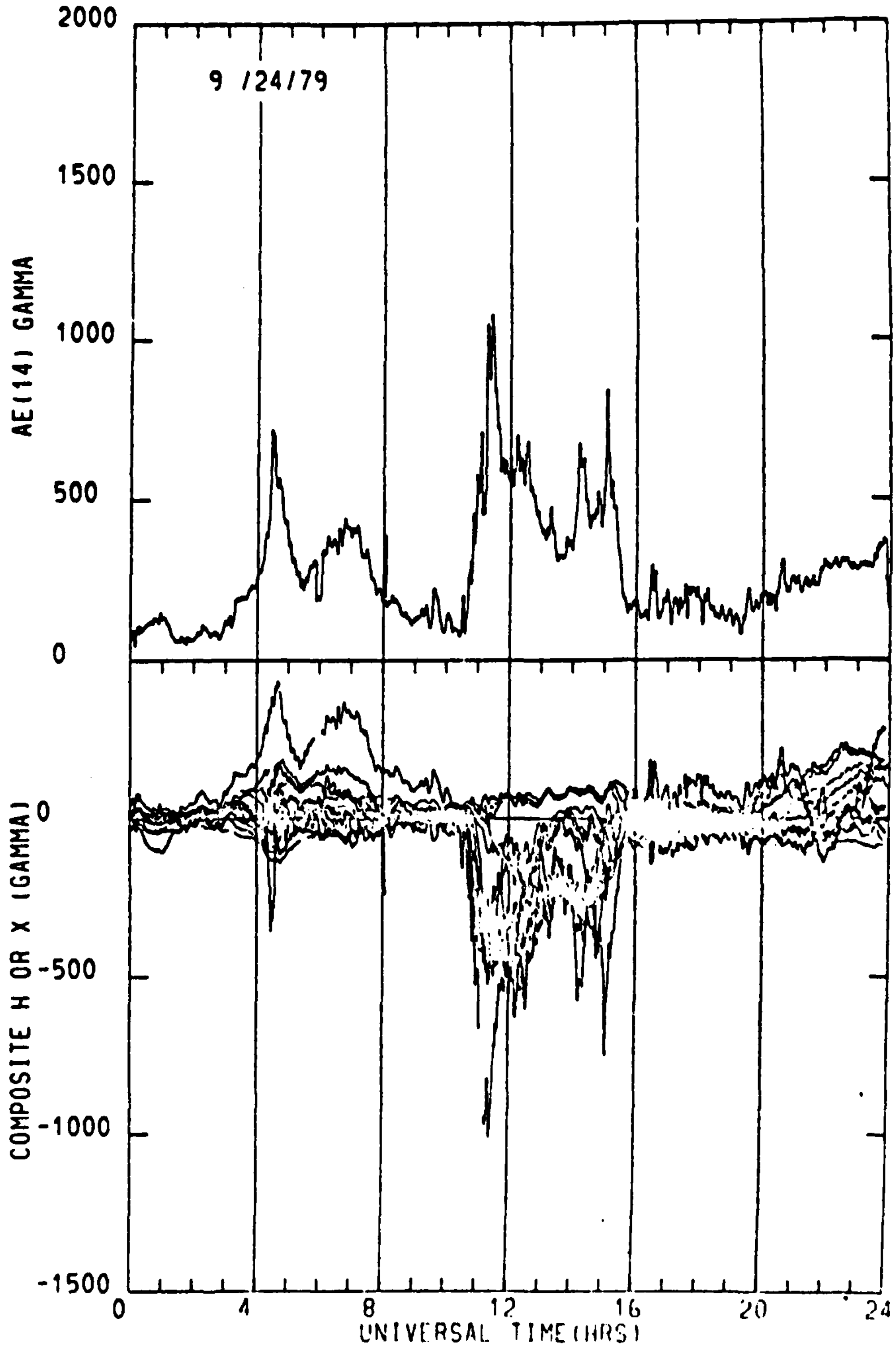


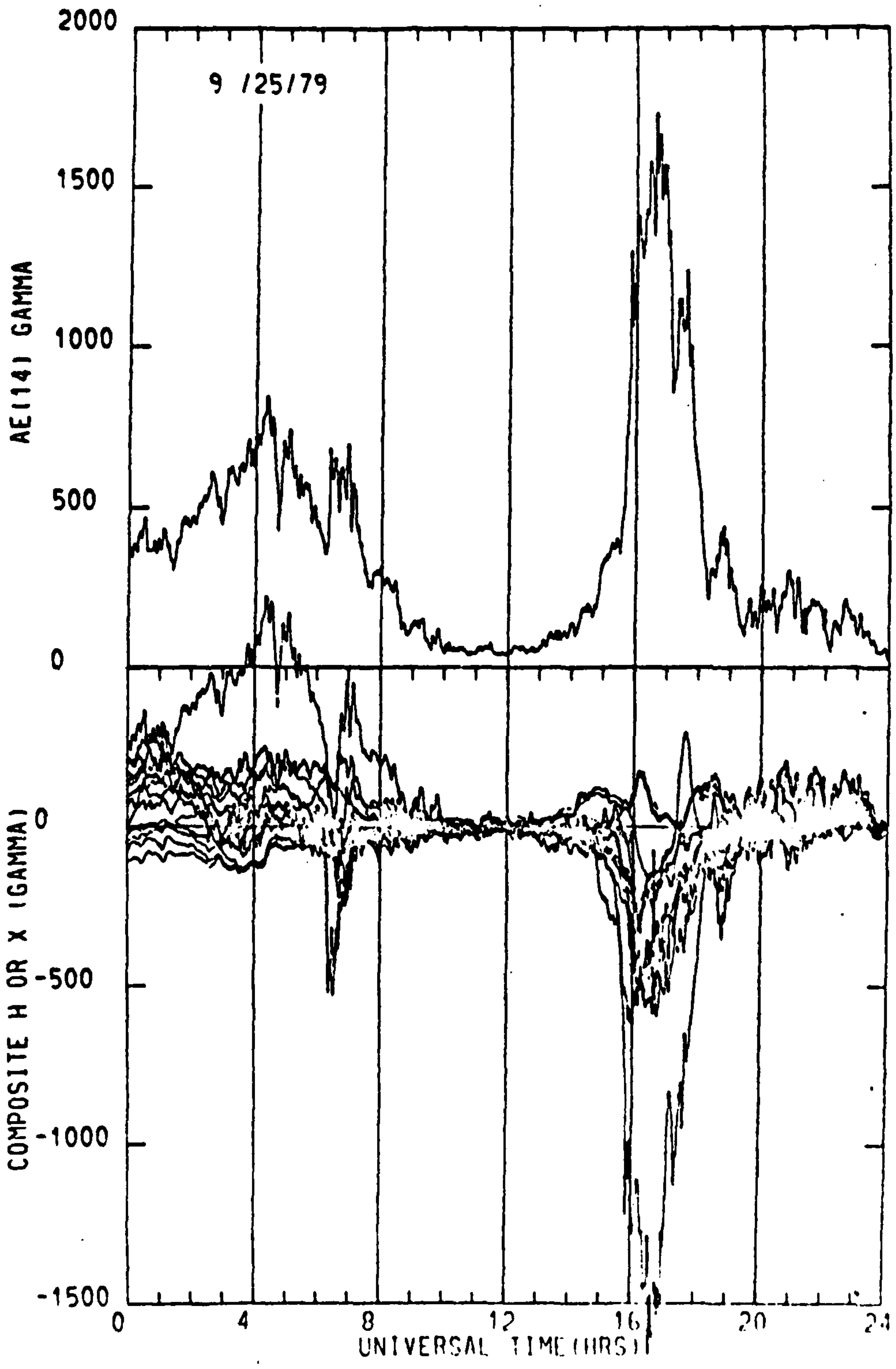
9 /20/79
AE(15) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

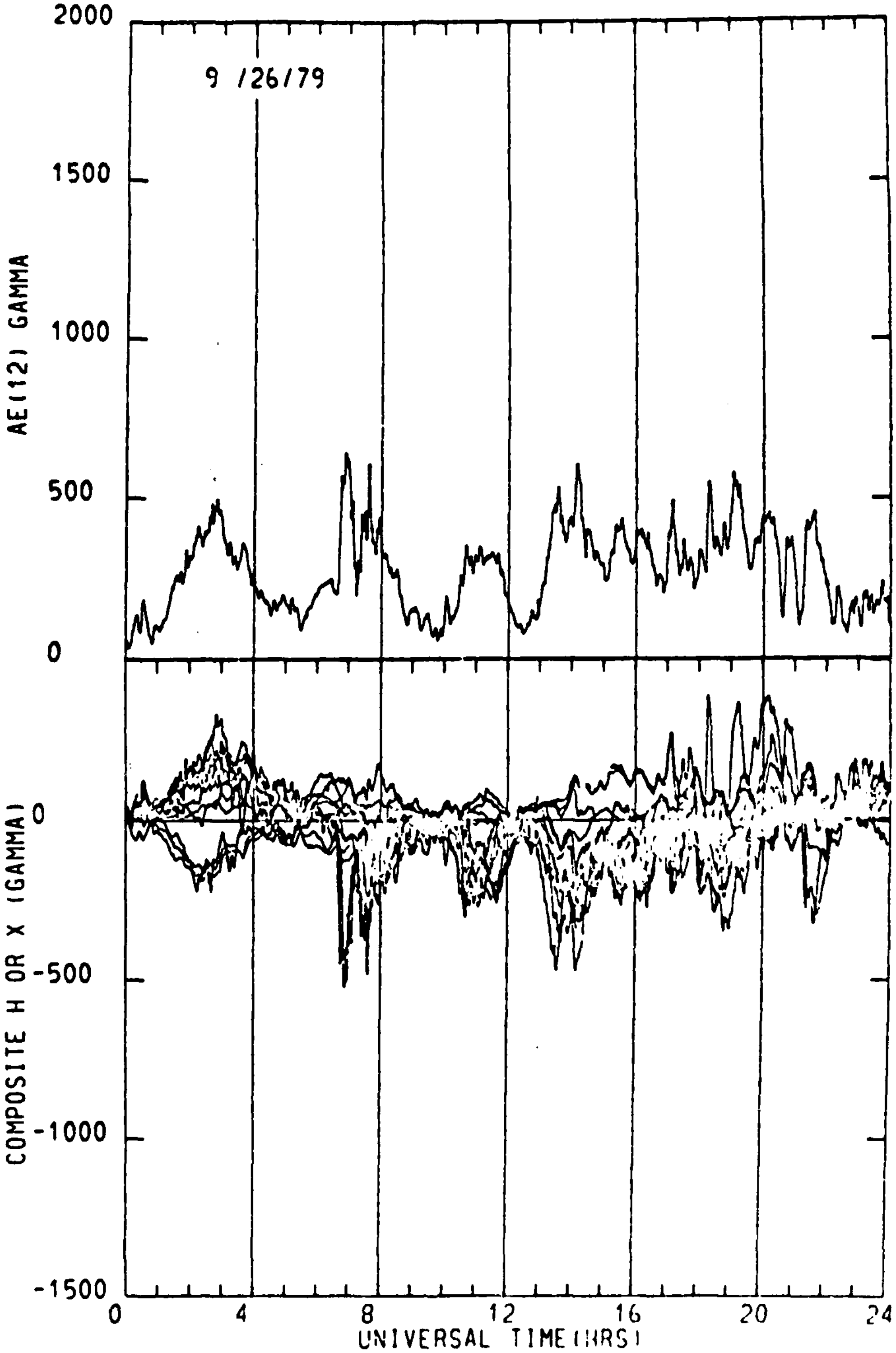

9 /21/79
AE(15) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

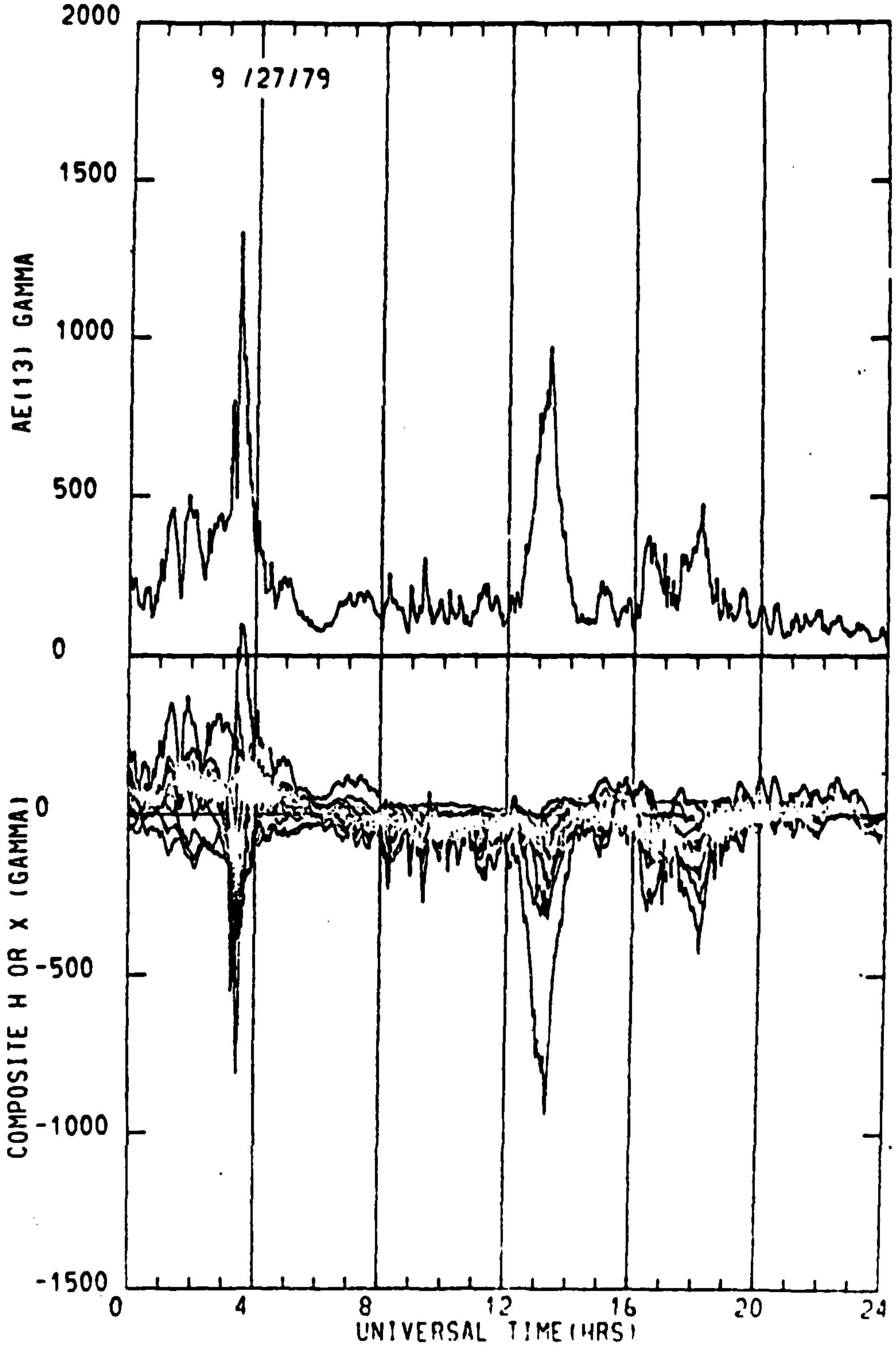

2000
.9 /22/79
1500
AE(14) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

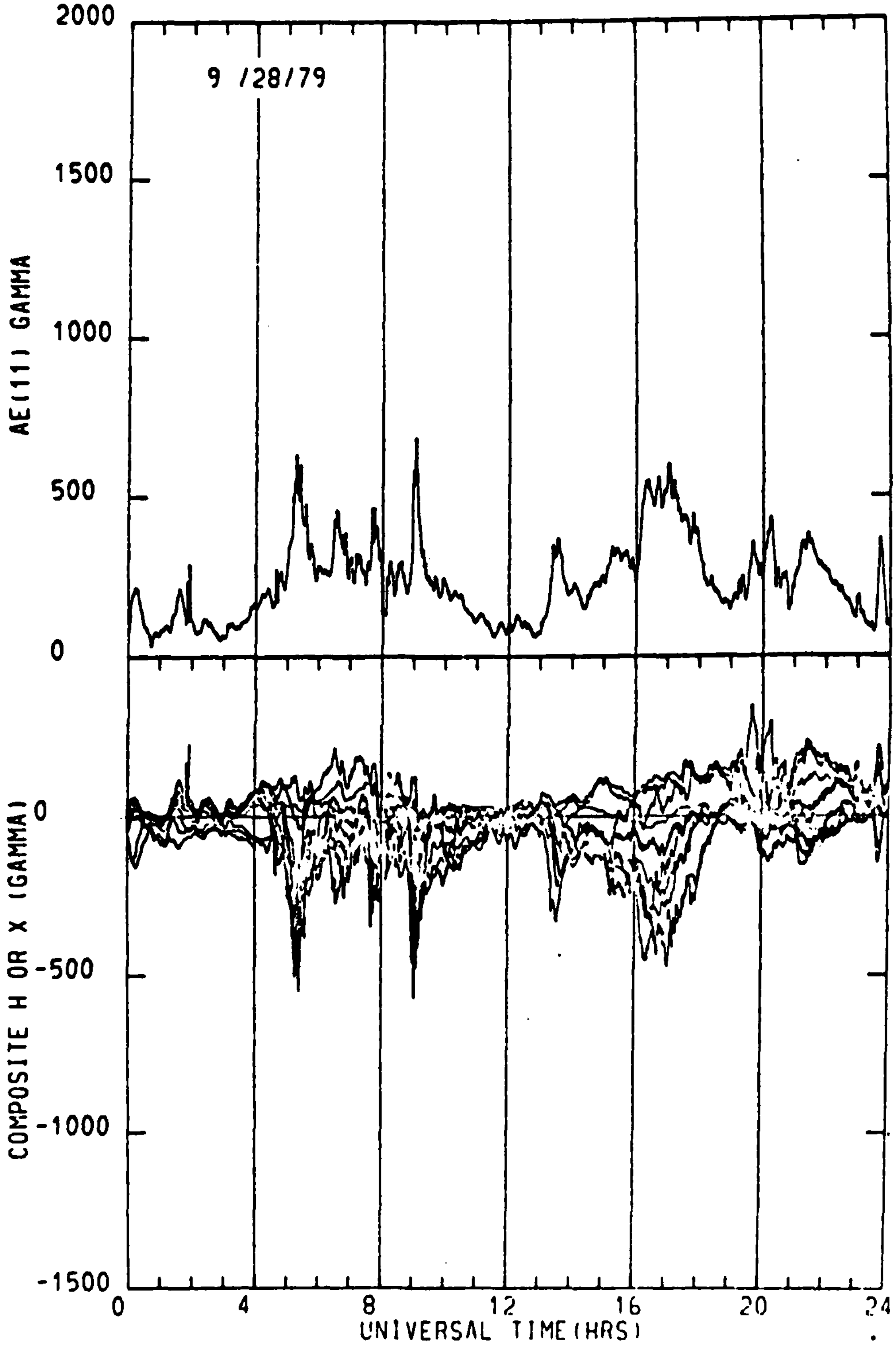

9 /23/79
AE(14) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

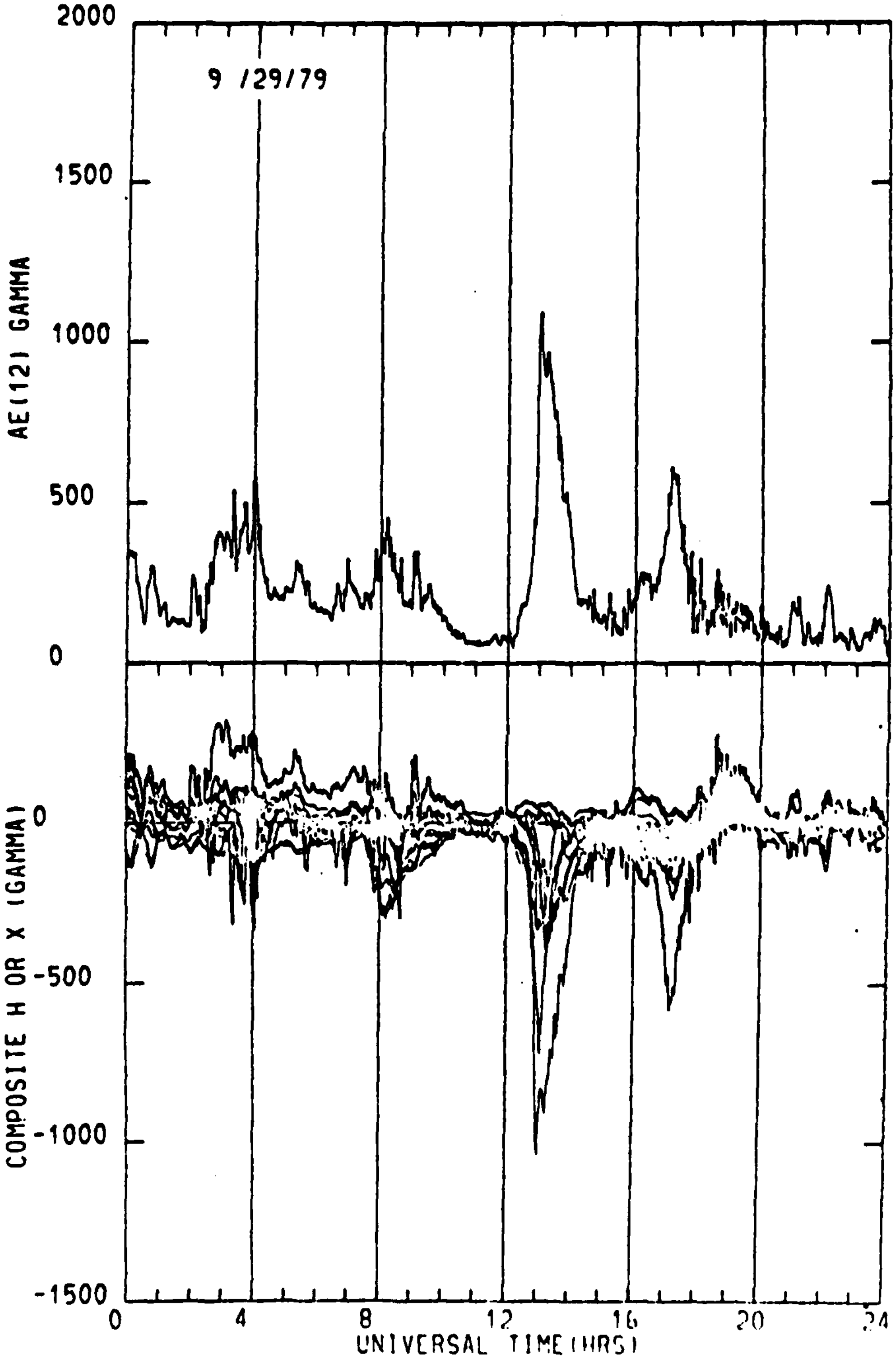

9 /24/79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


9 /25/79
AE(14) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

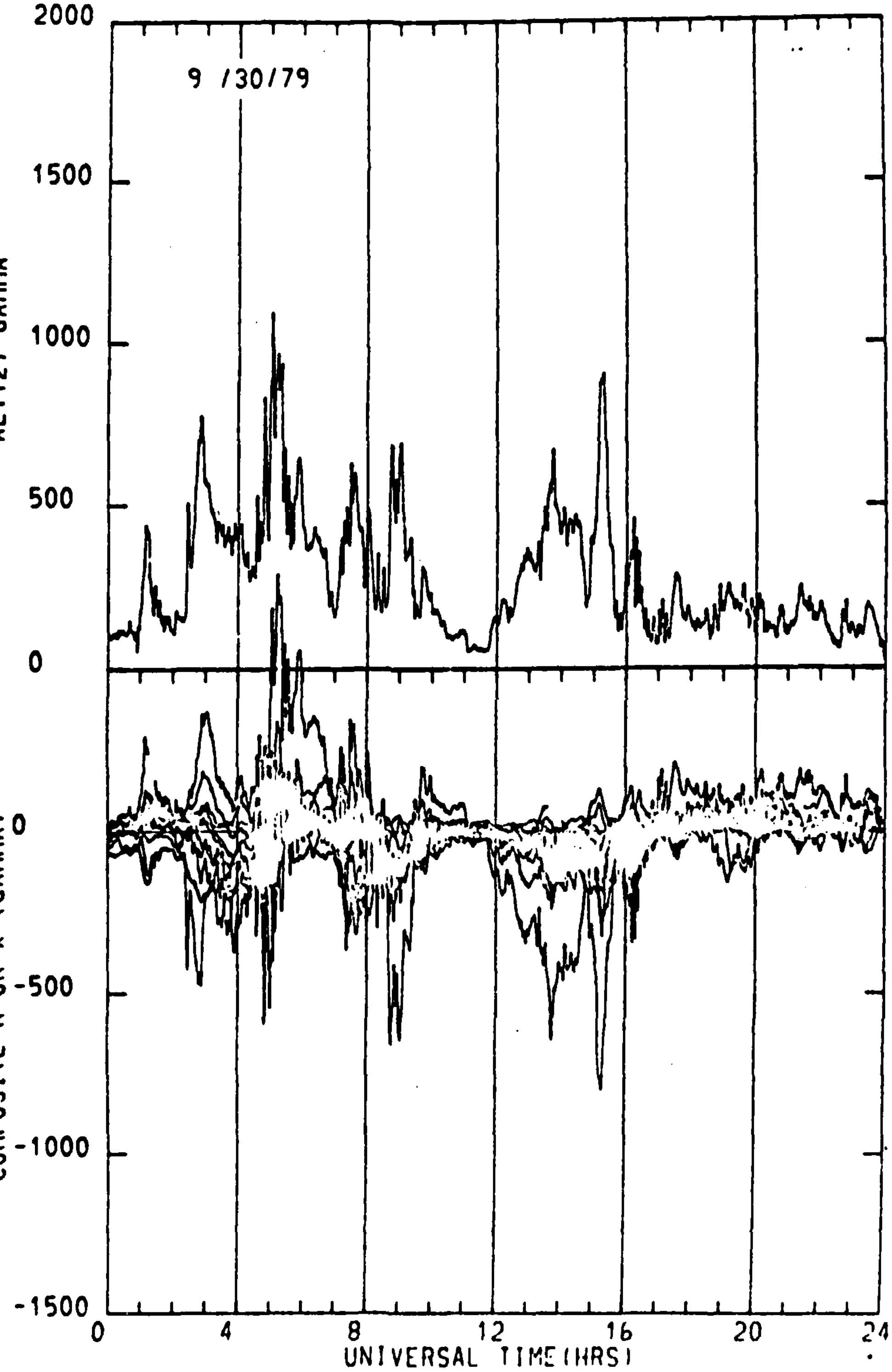

9 /26/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

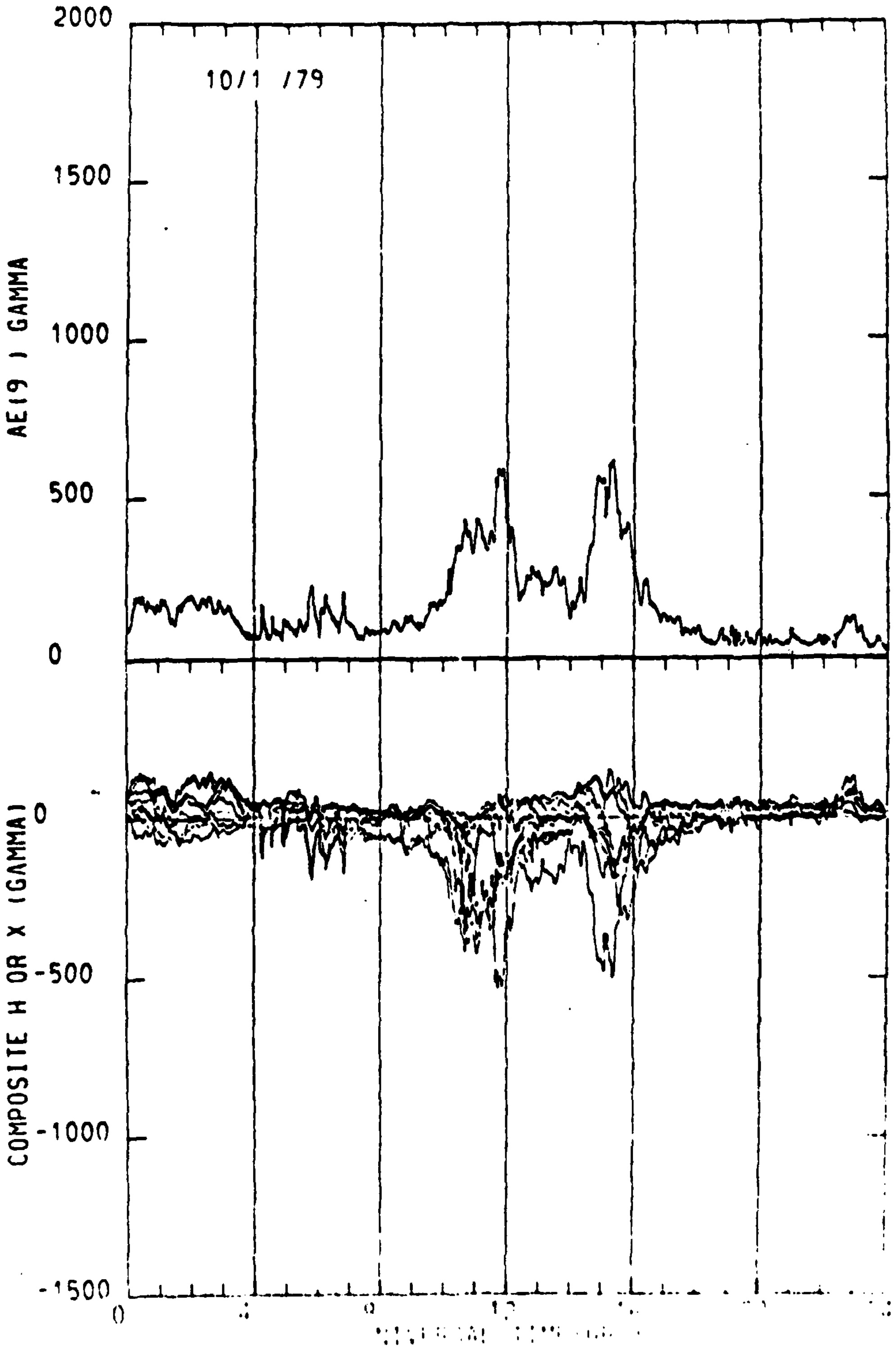

9 /27/79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


9 /28/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

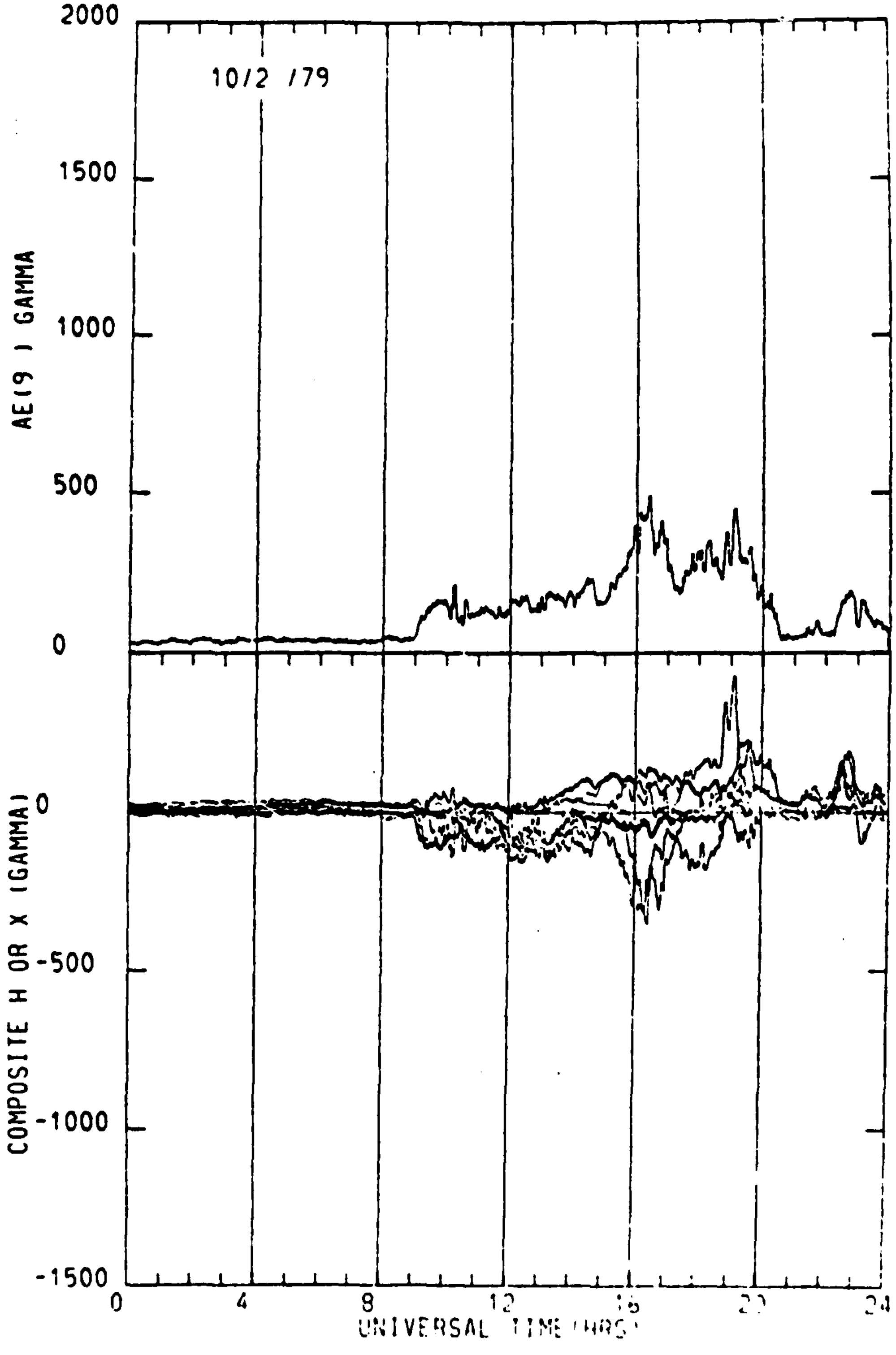


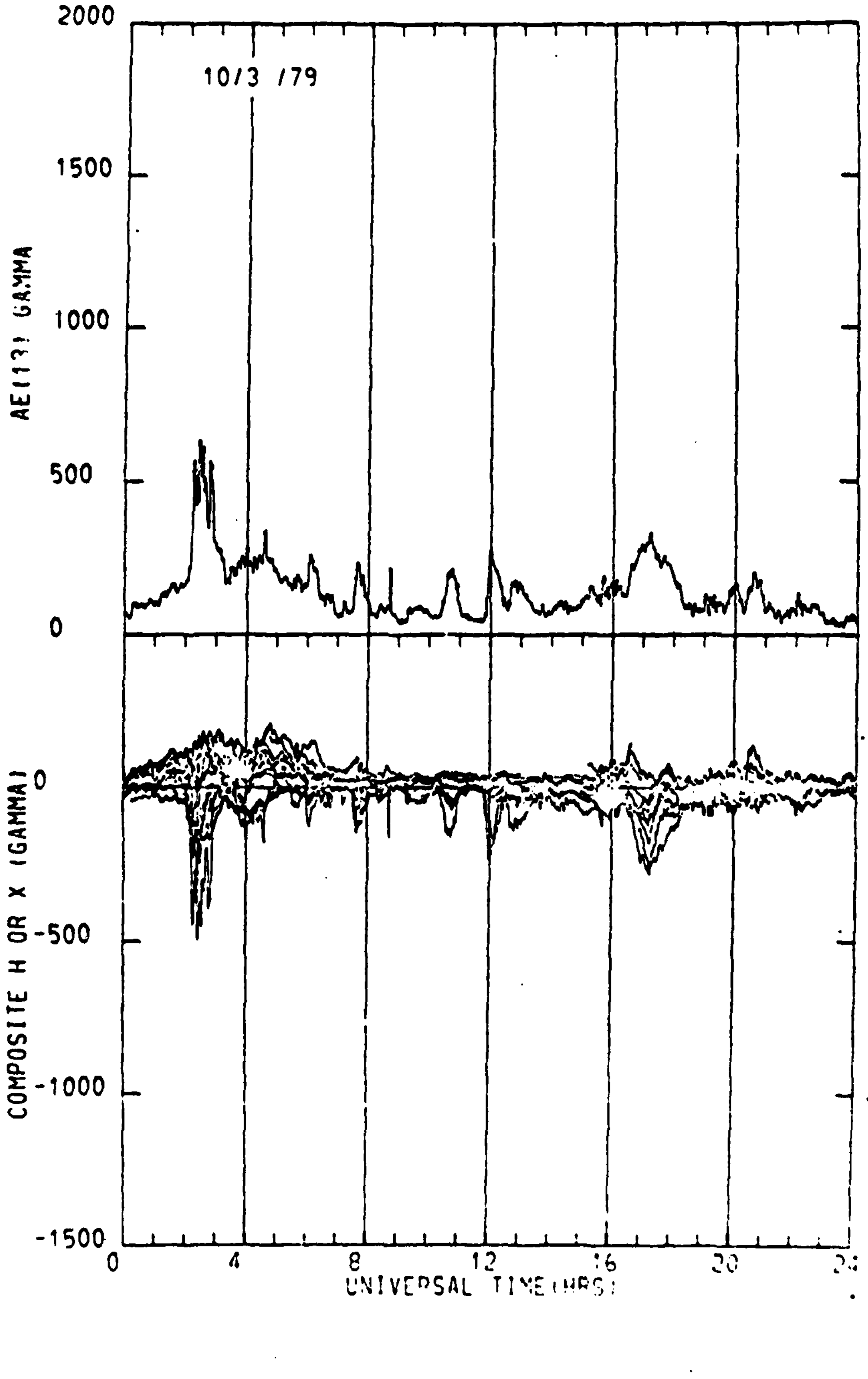
9 /29/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


9 /30/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

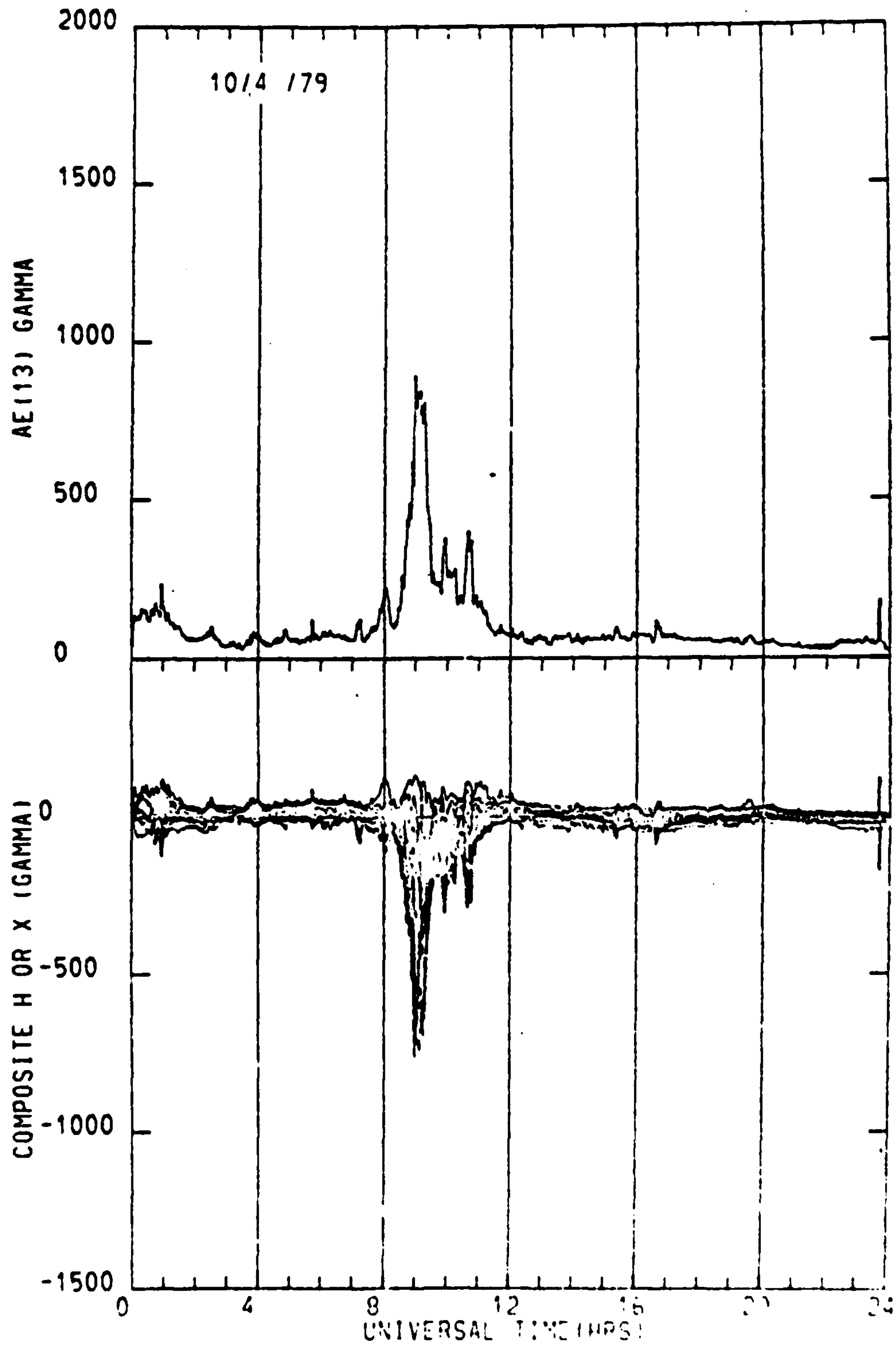


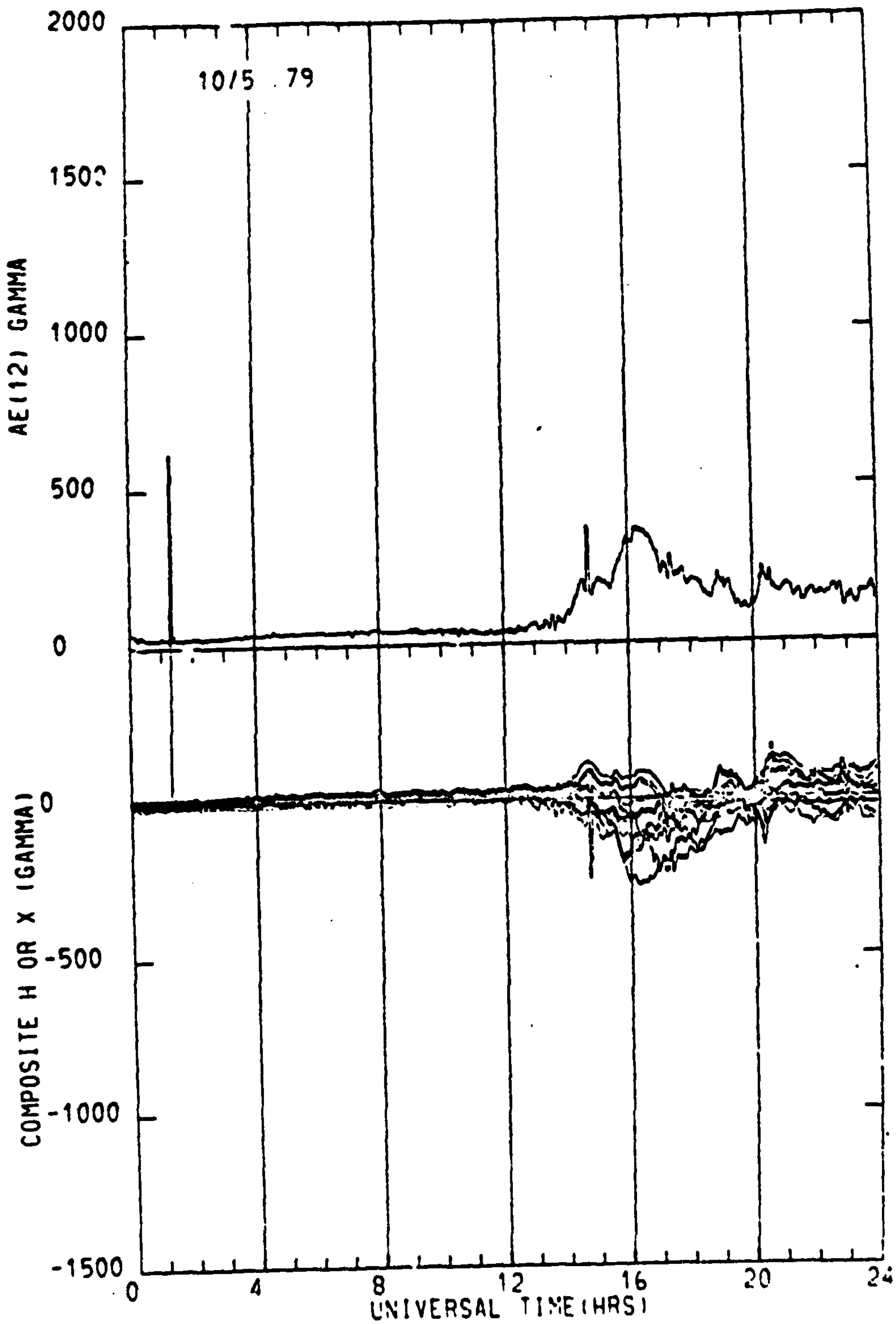
2000
10/1 /79
1500
AE(9) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0


10/2 /79
AE(9) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
20
24
UNIVERSAL TIME

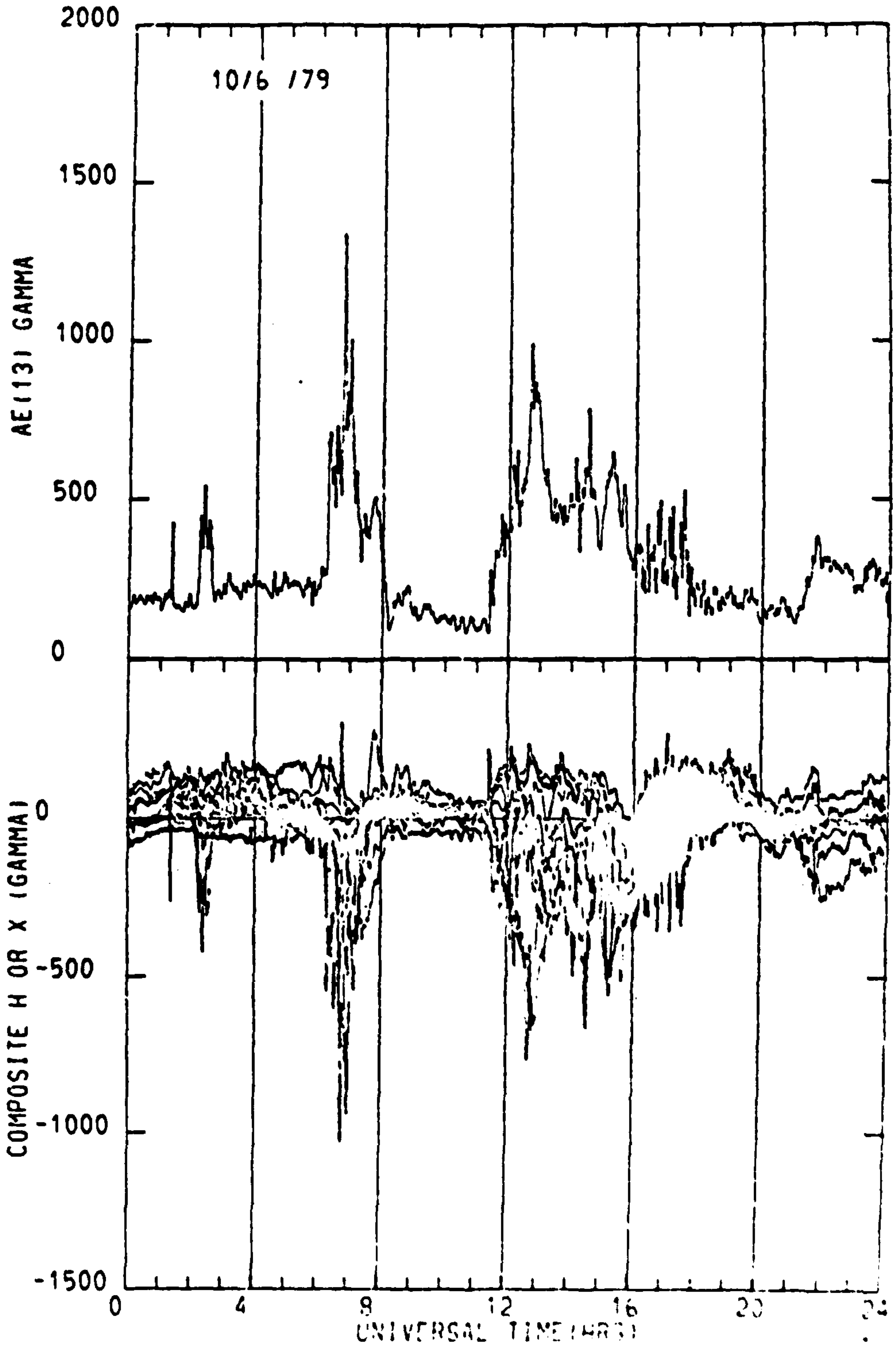


2000
1500
1000
500
0
10/3 /79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

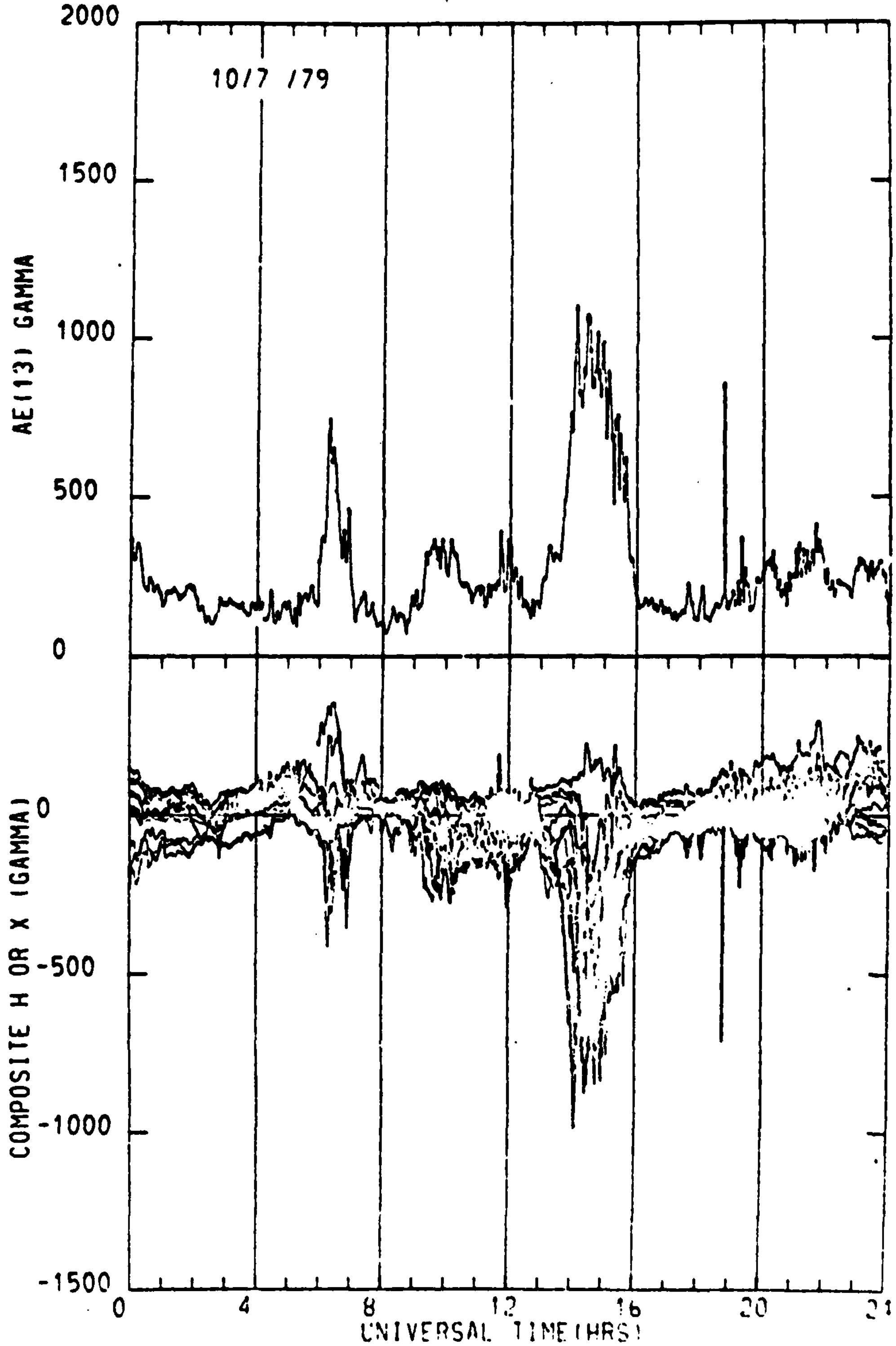

10/4 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
UNIVERSAL TIME(HRS)

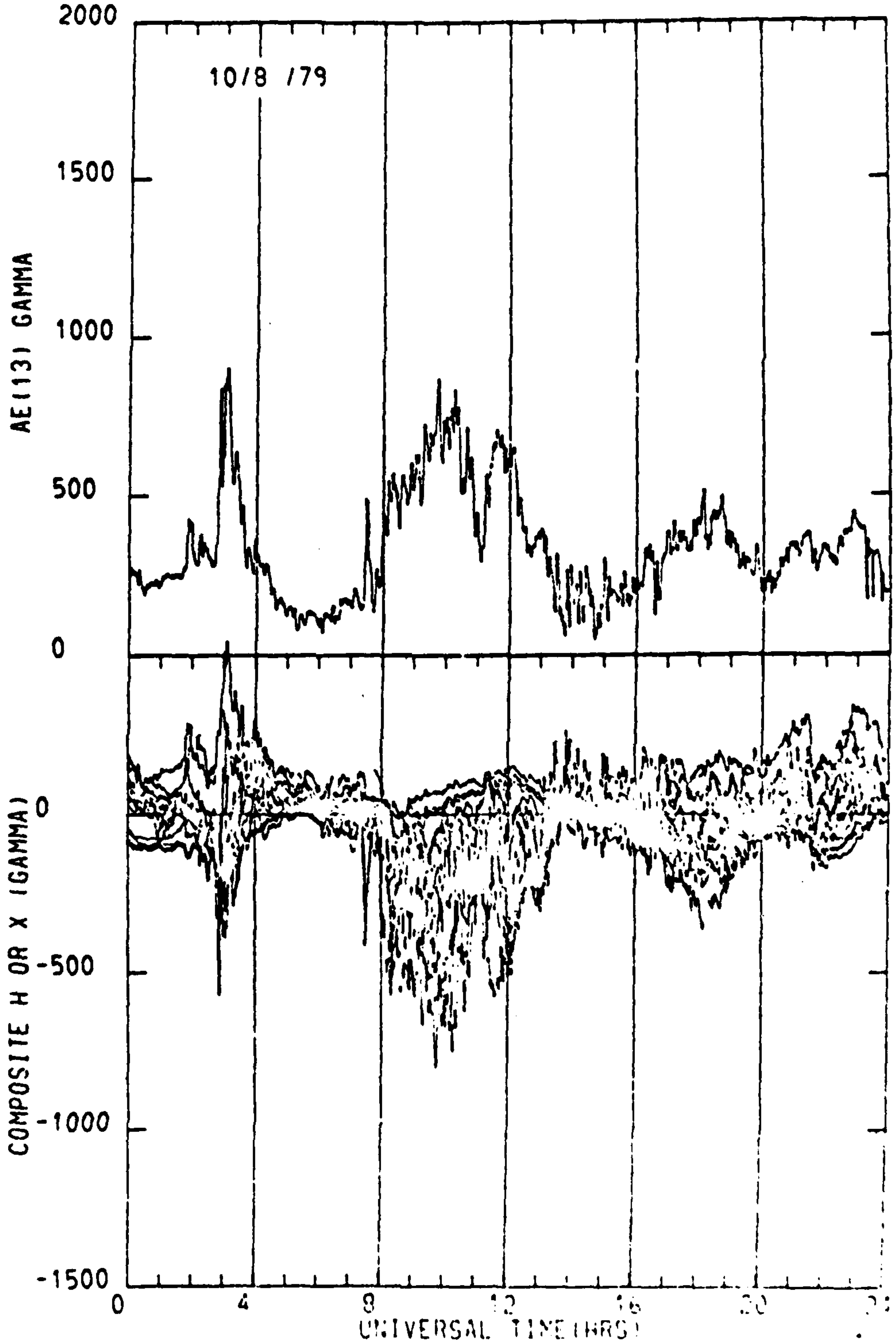


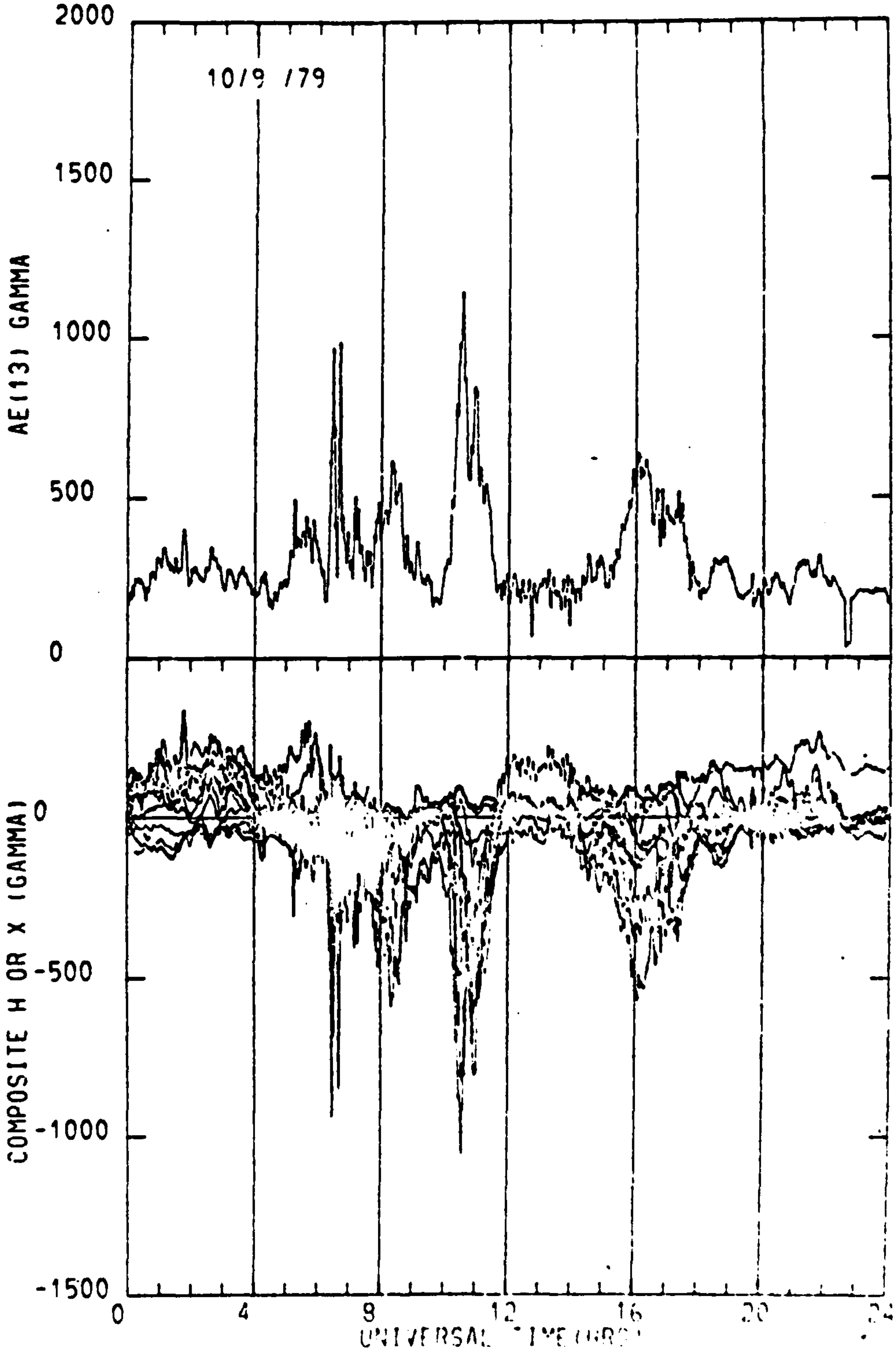
10/5 . 79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

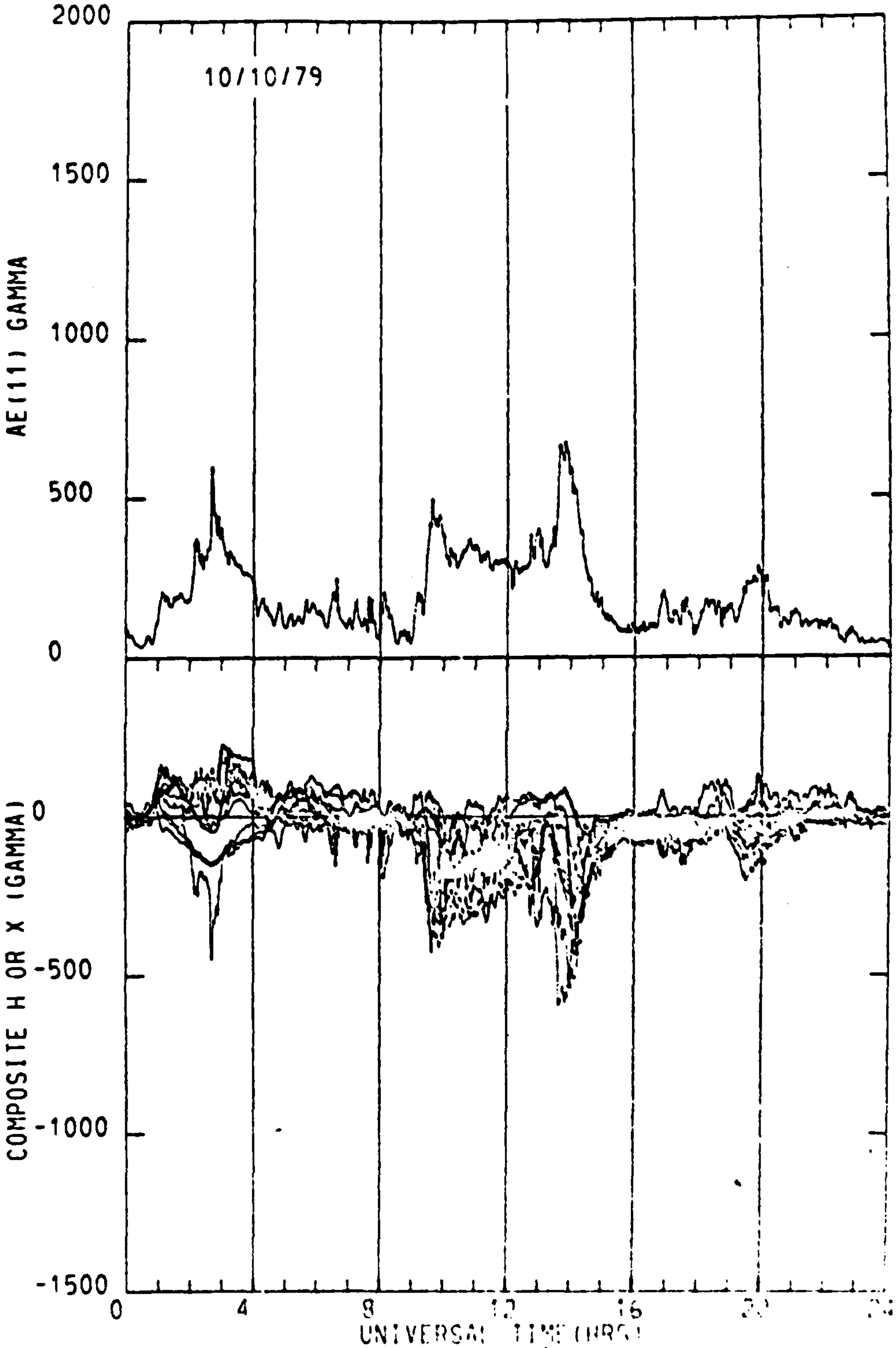


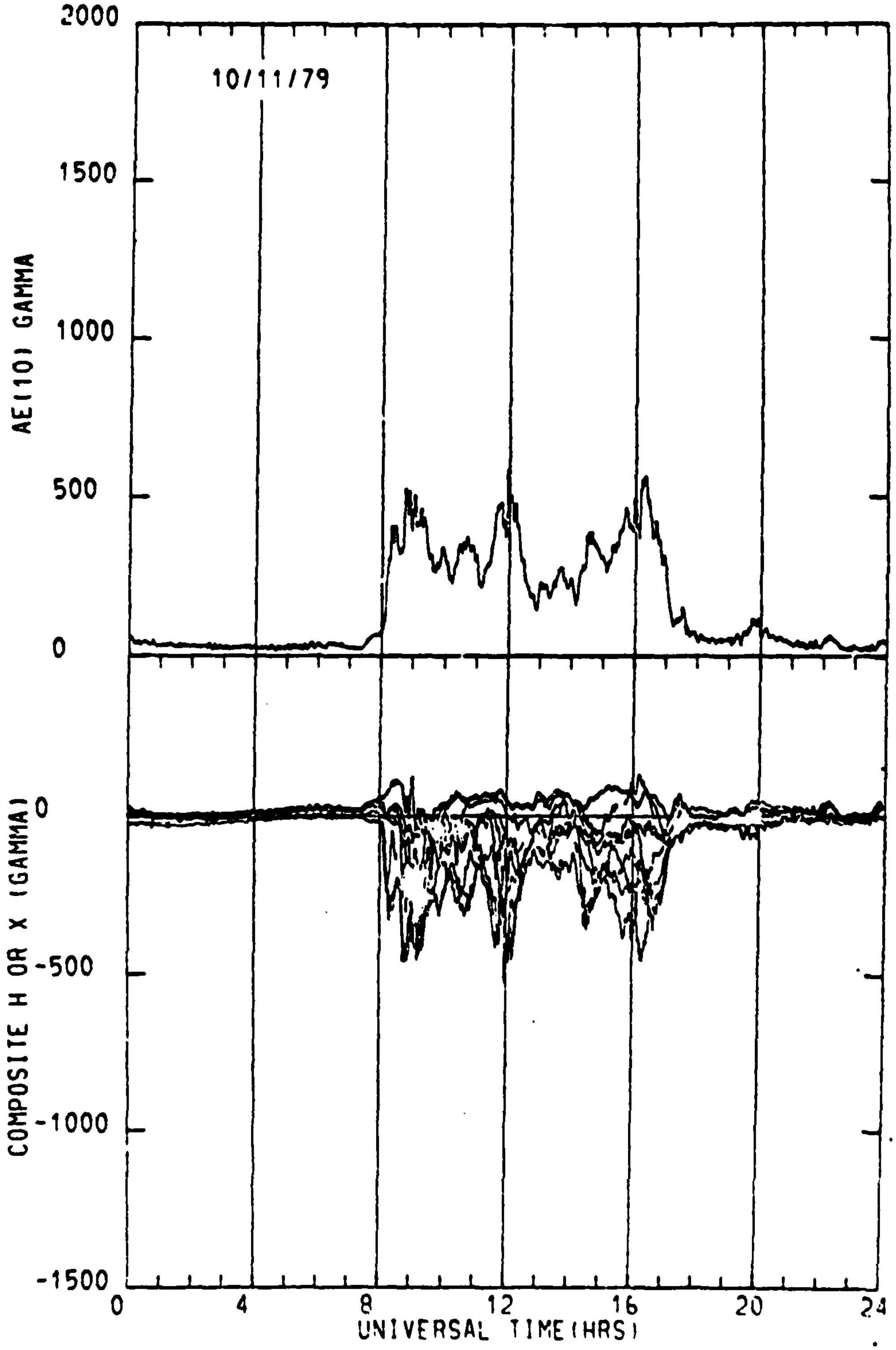
10/6 /79
AE(13) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

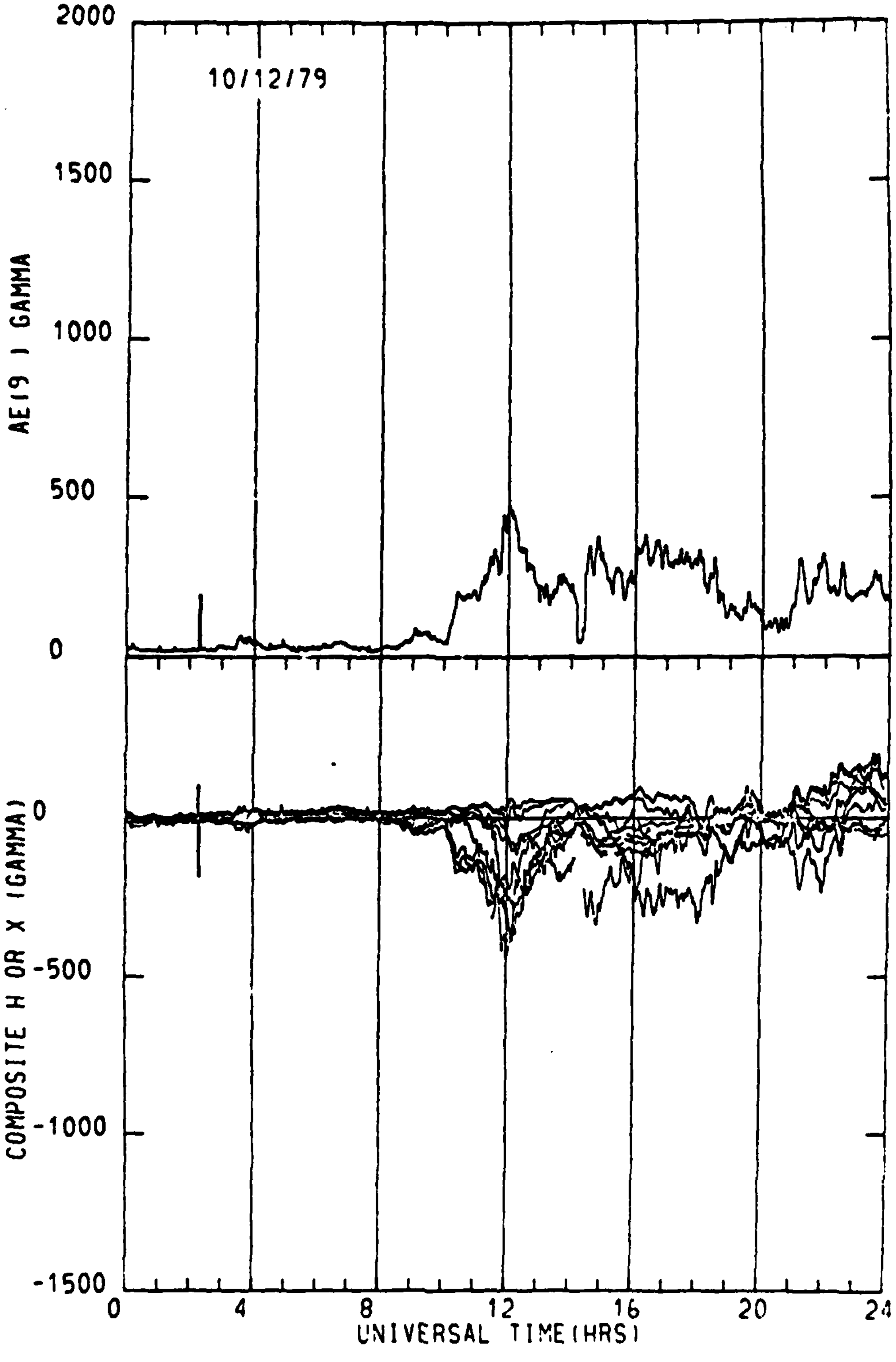

10/7 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

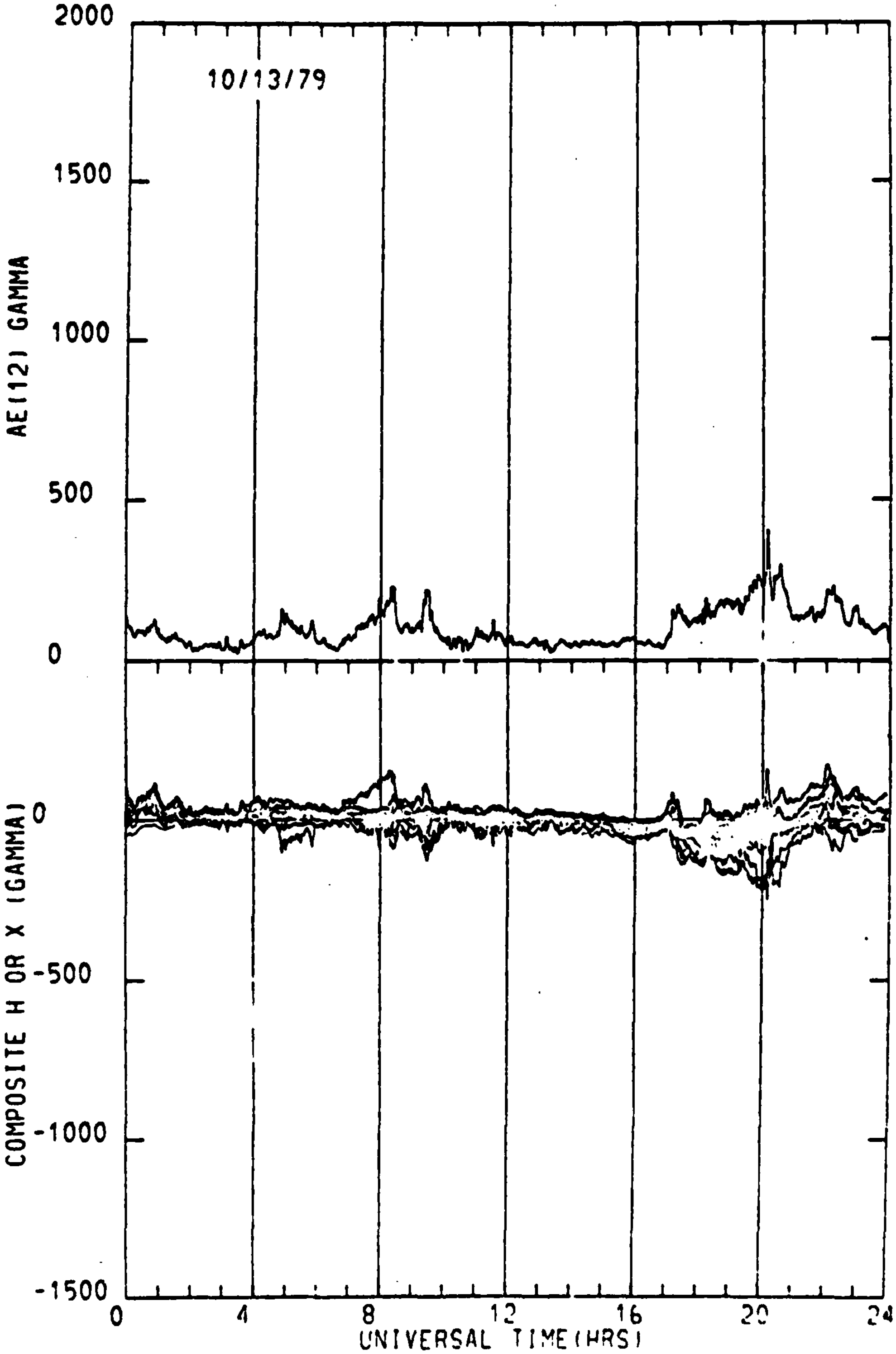

10/8 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

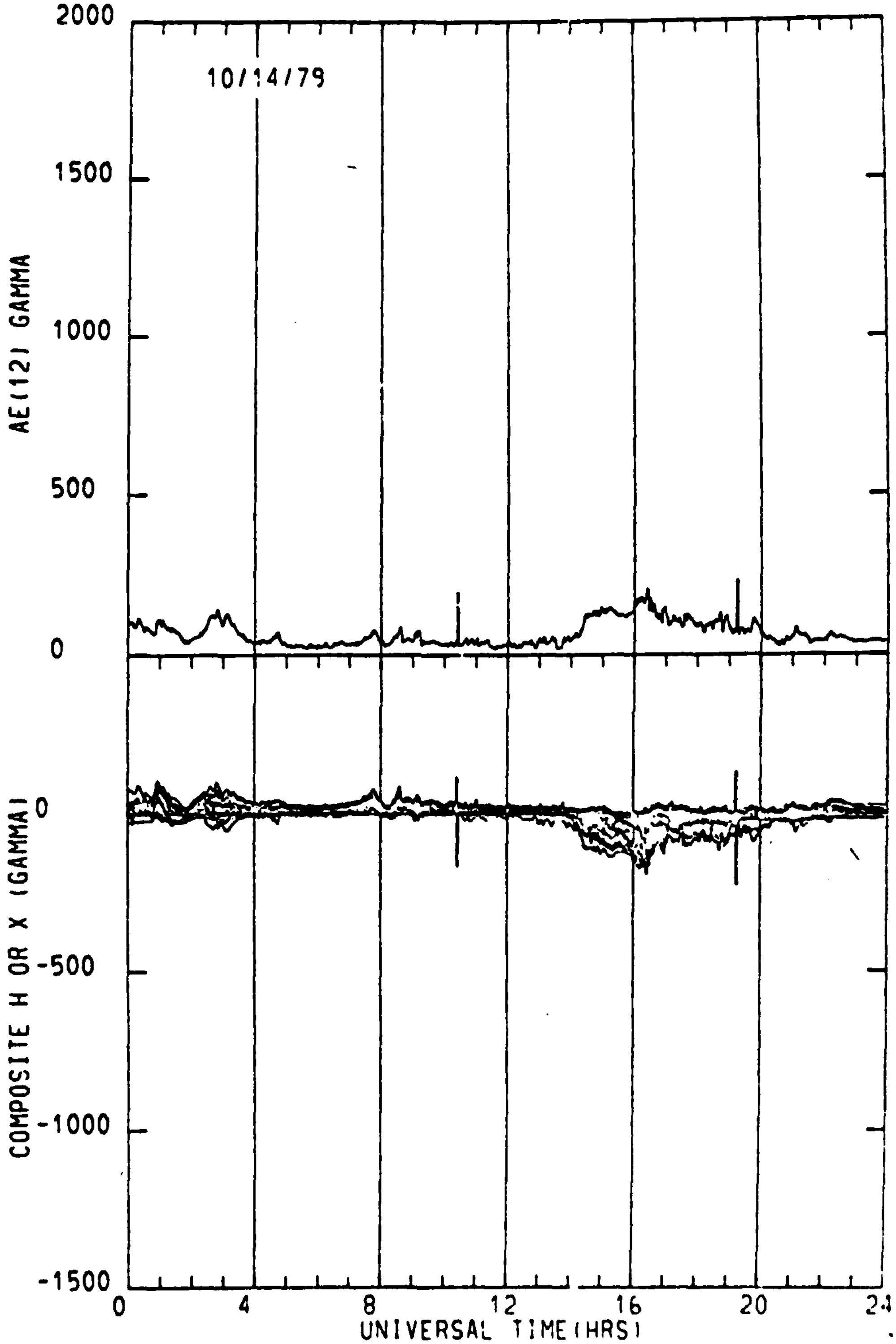

10/9 /79
2000
1500
1000
500
0
AE(13) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24

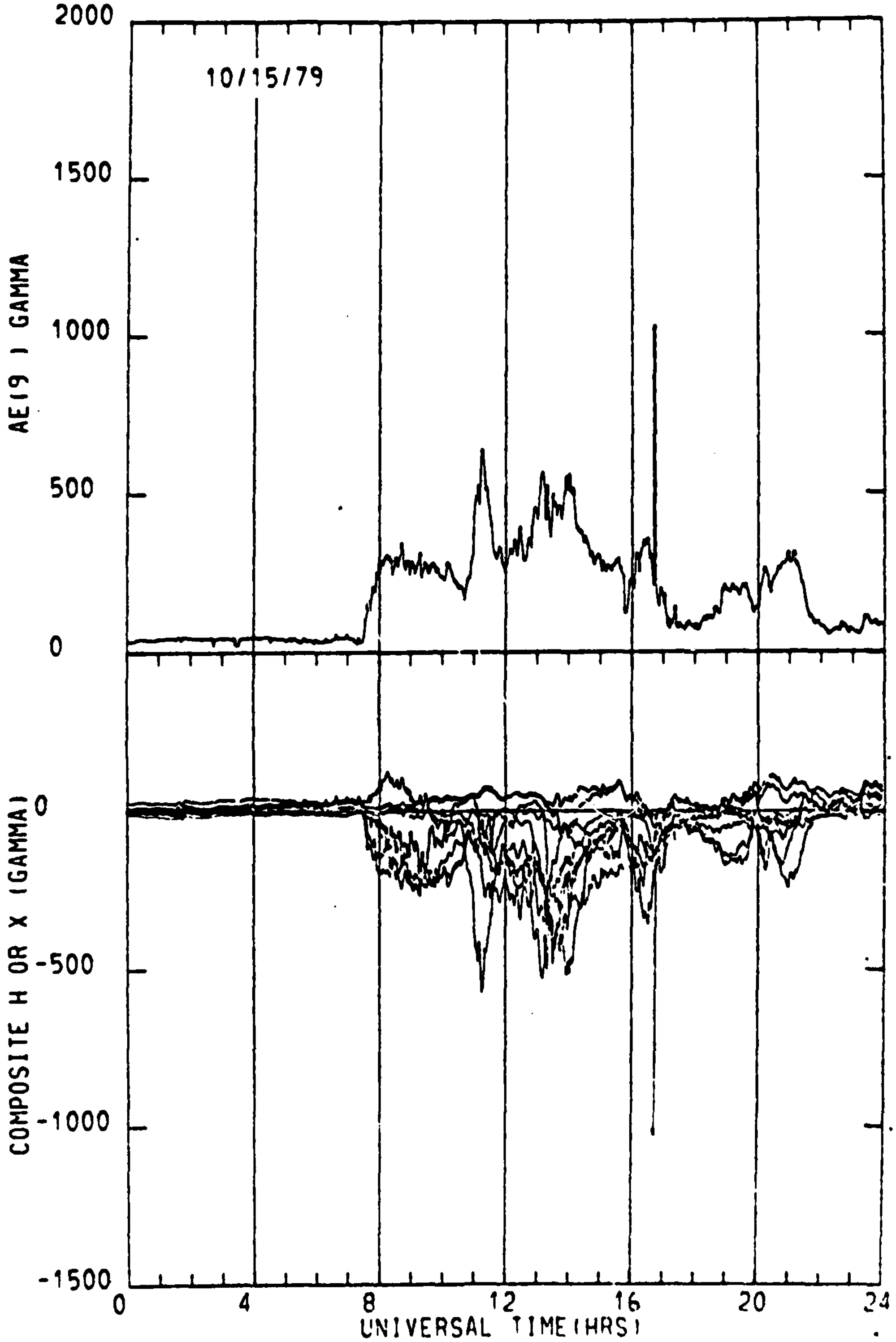

10/10/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
16
UNIVERSAL

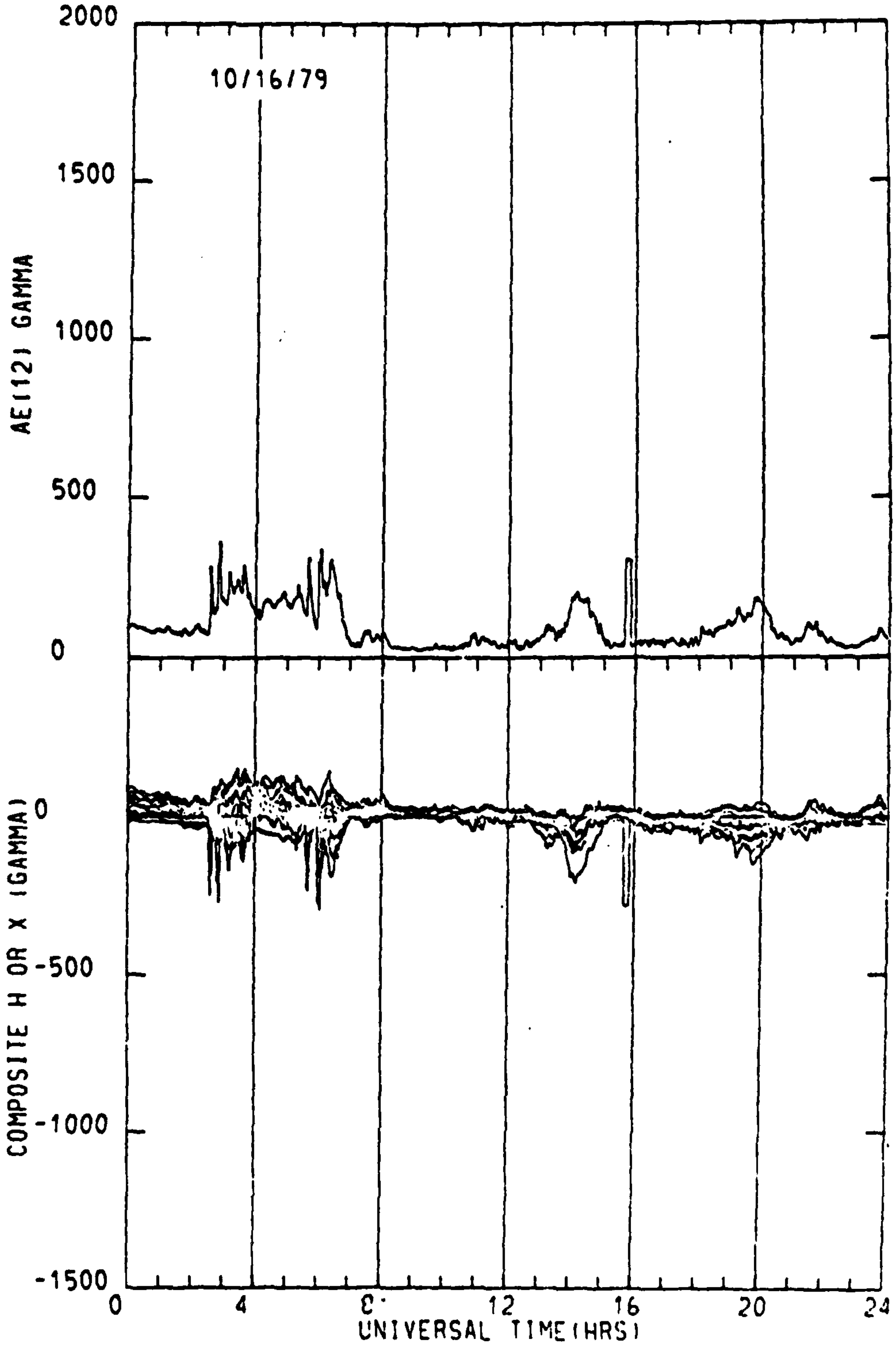

10/11/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


10/12/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

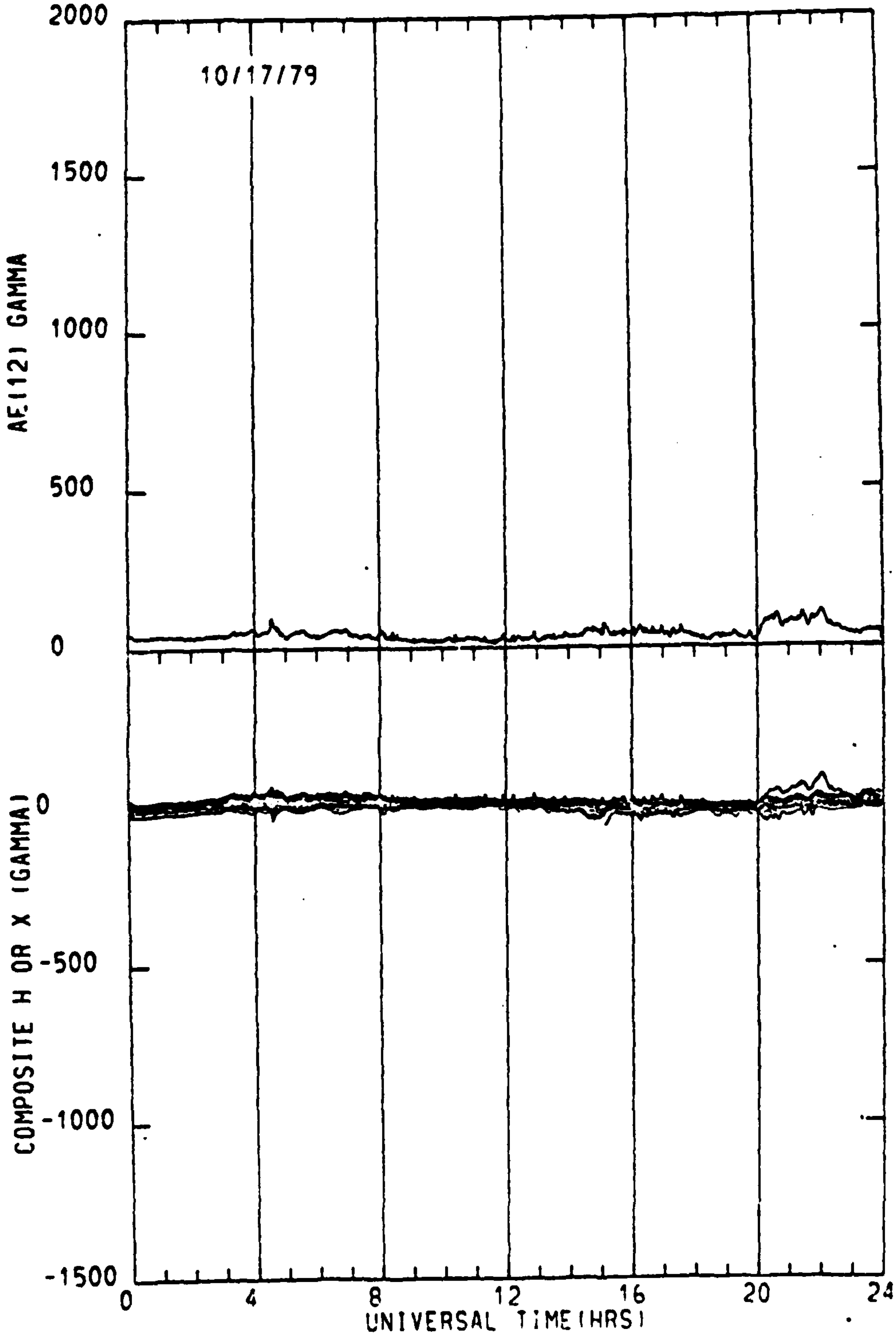

10/13/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

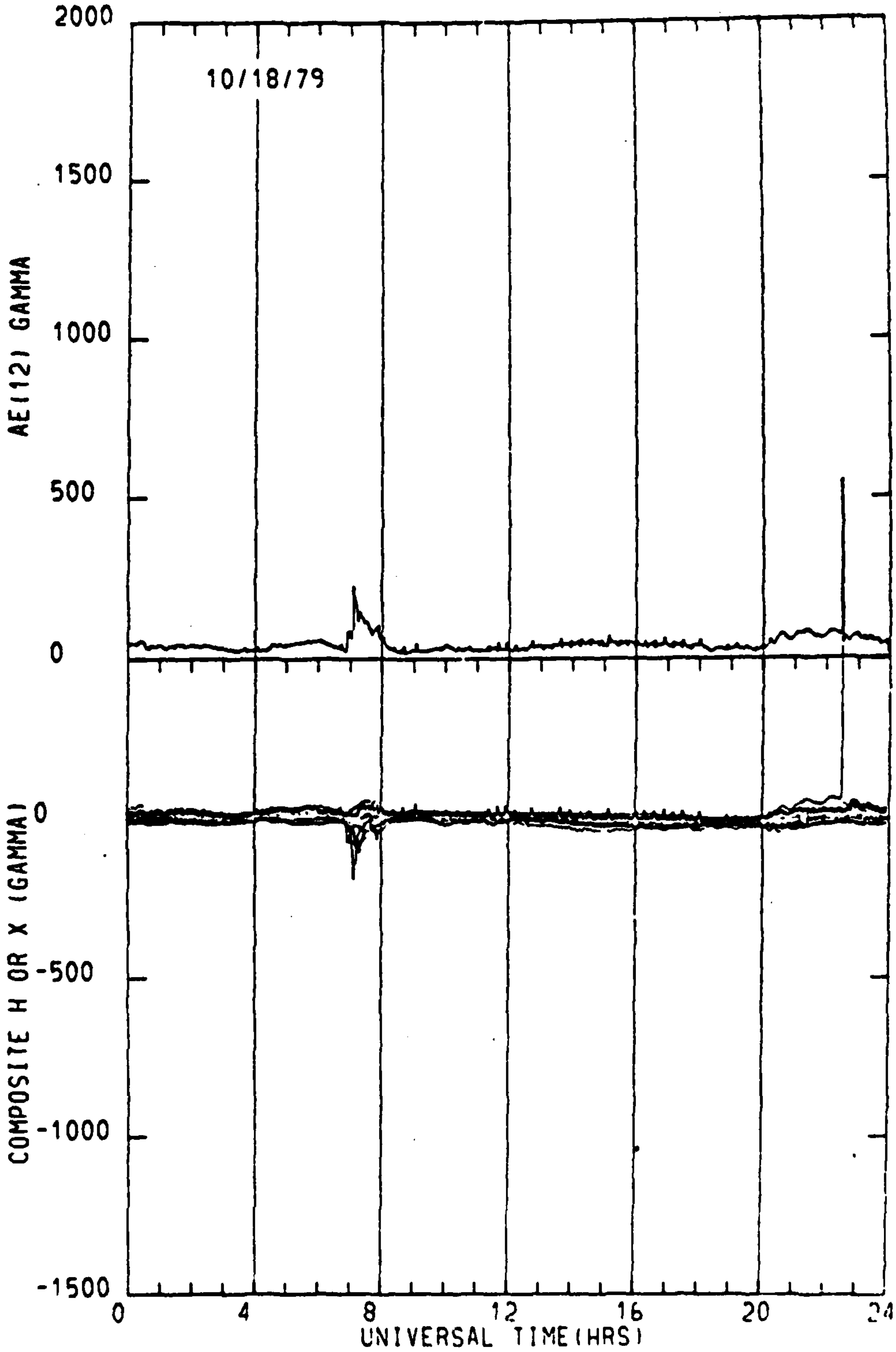

10/14/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

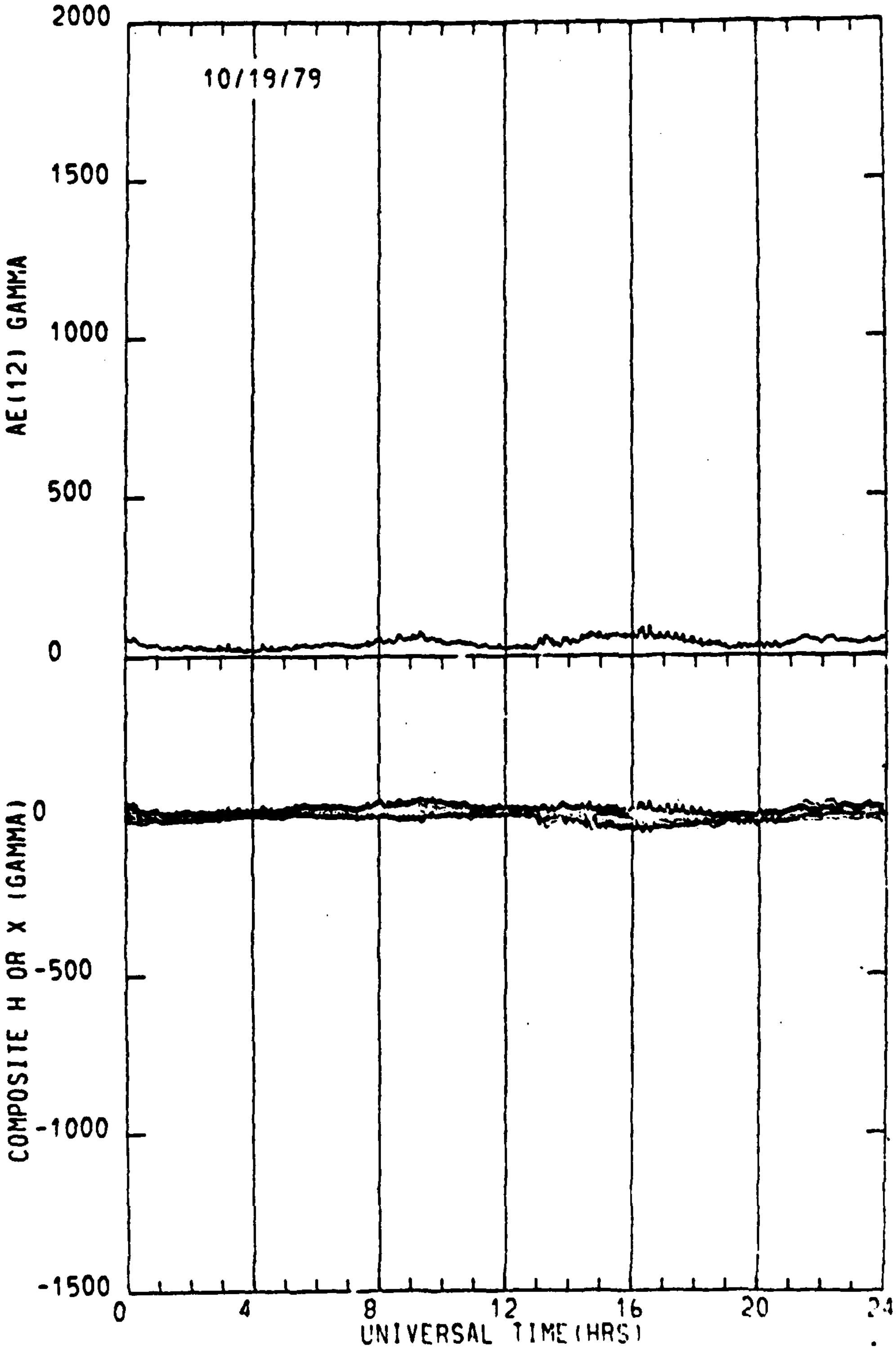

10/15/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



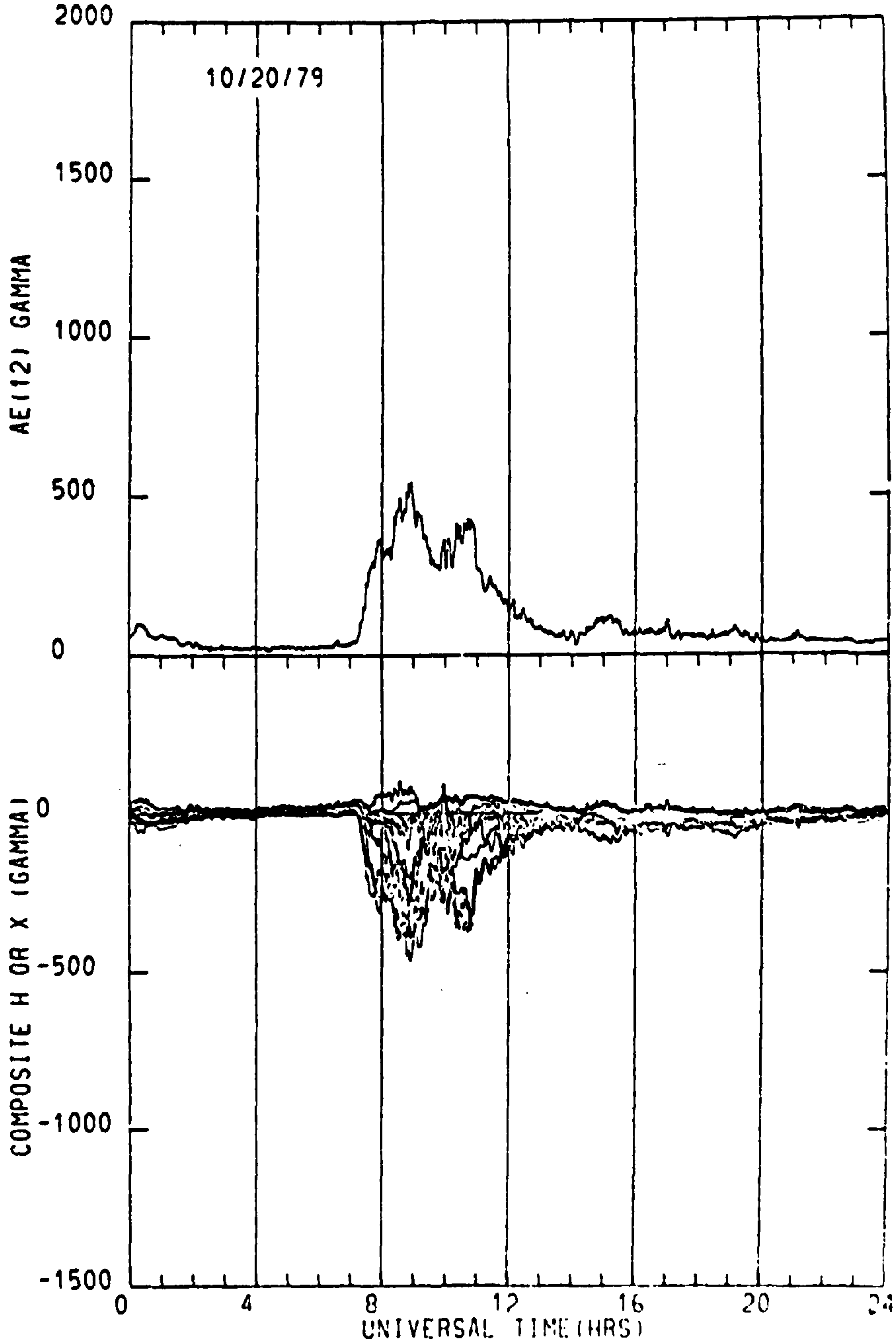
10/16/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

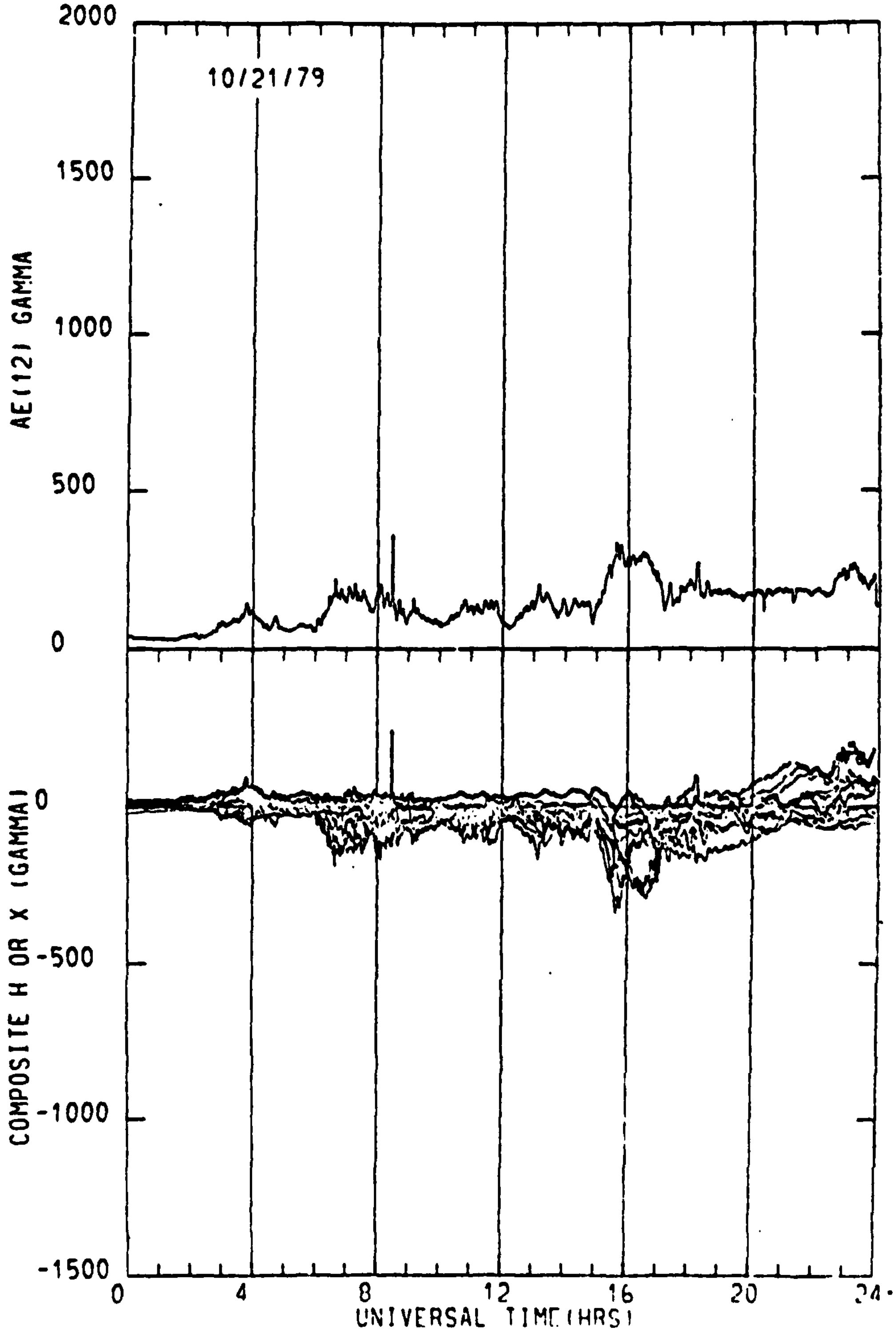

10/17/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

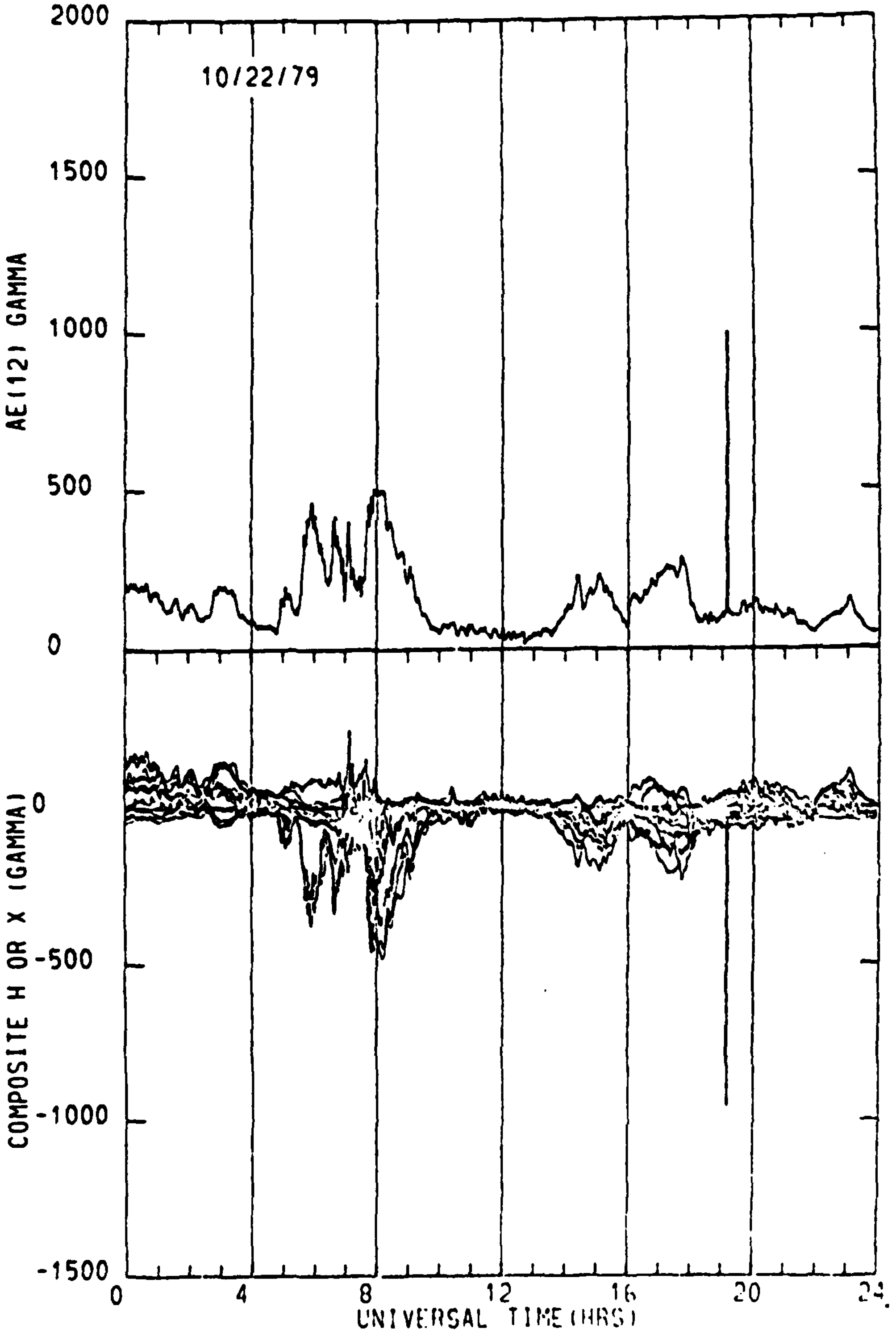

10/18/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



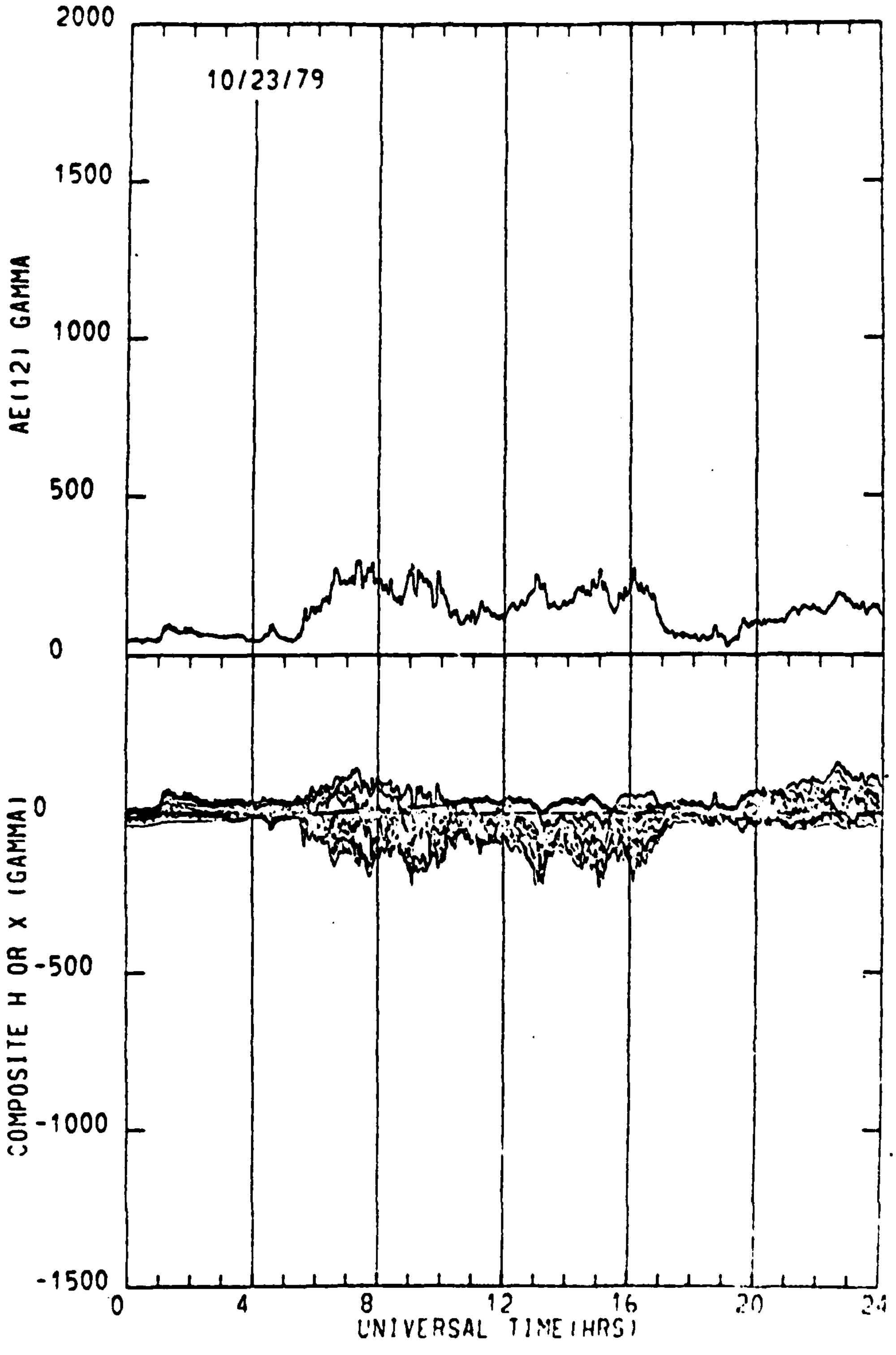
10/19/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

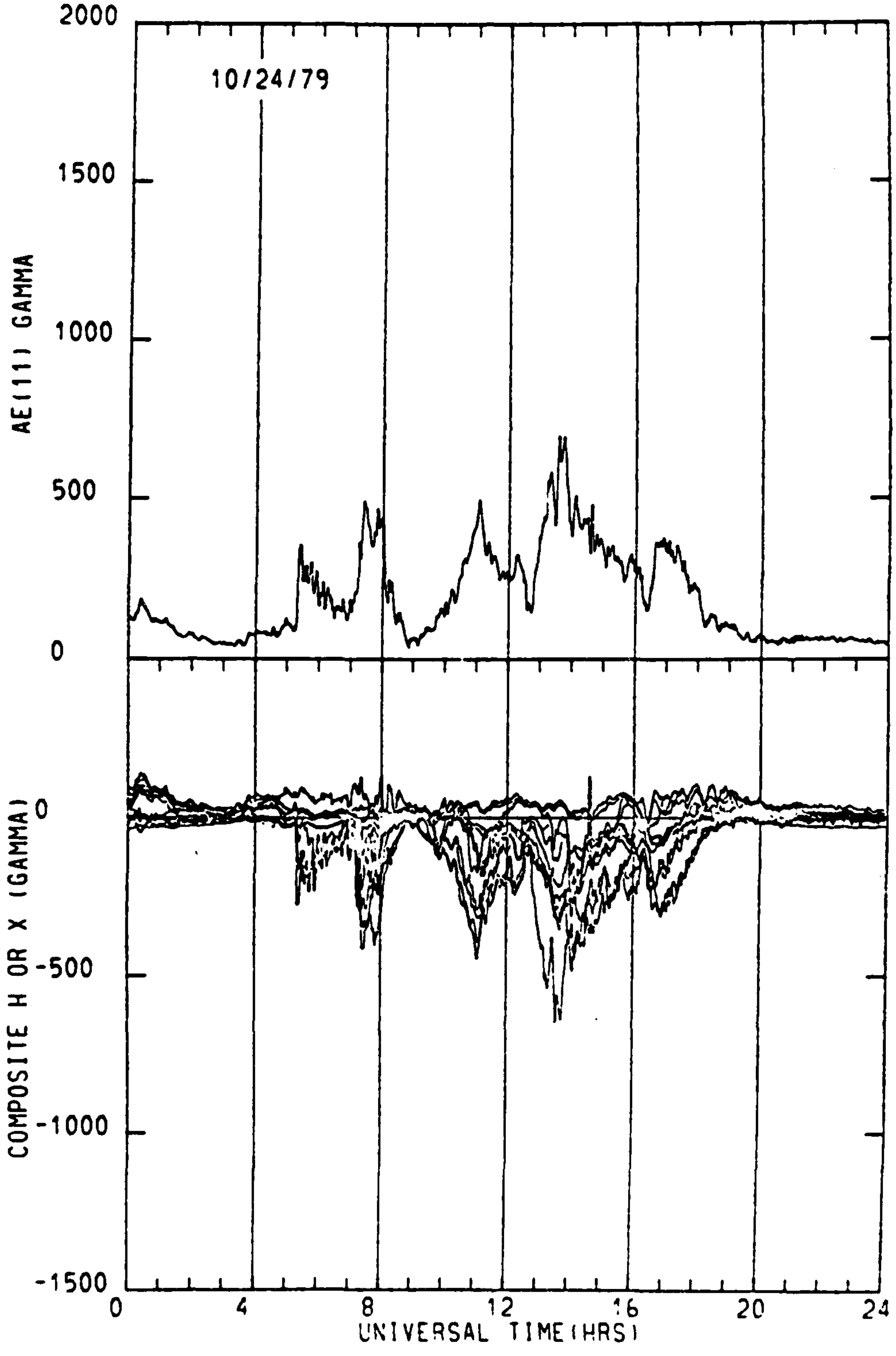

10/20/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

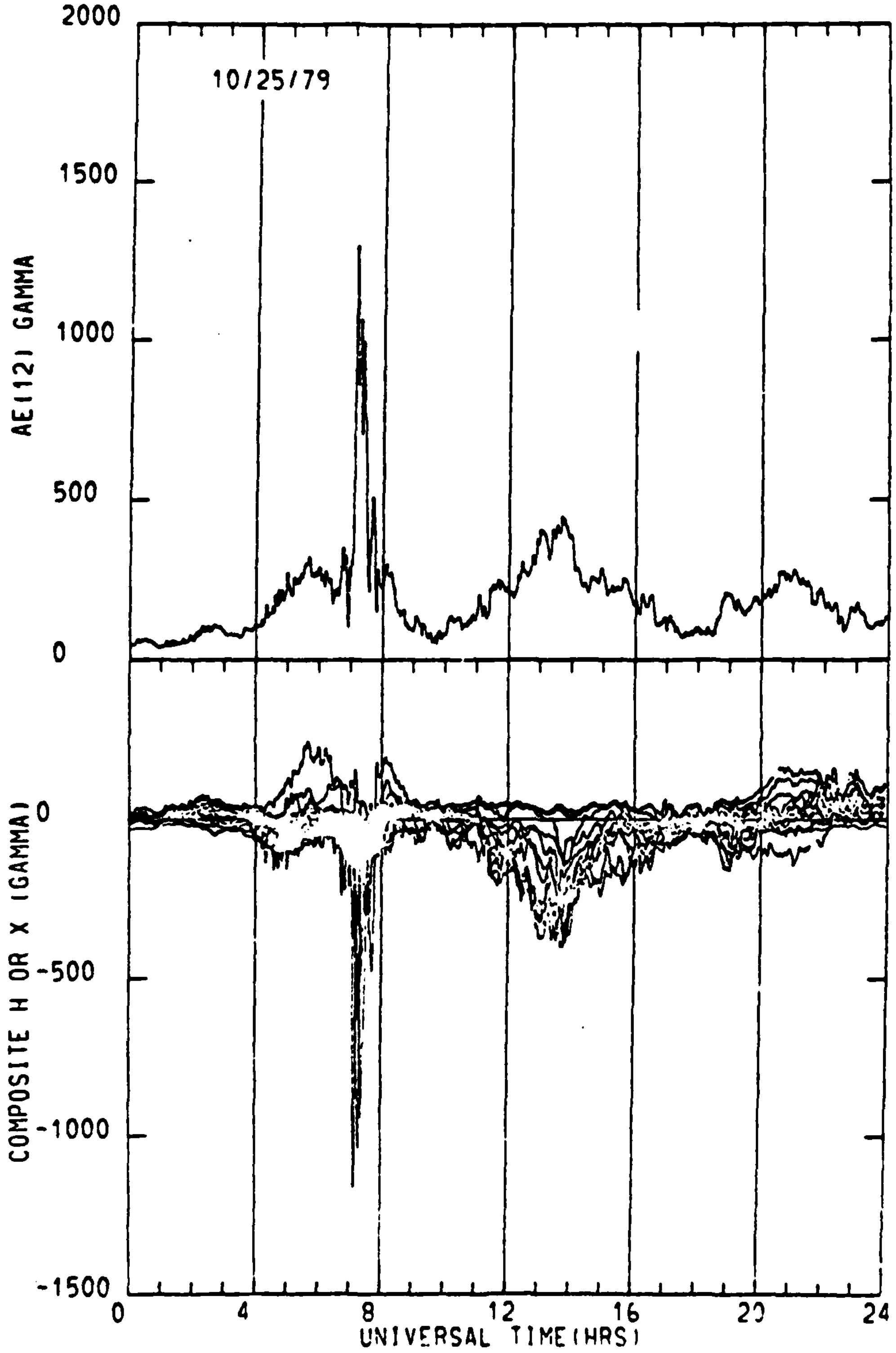

10/21/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



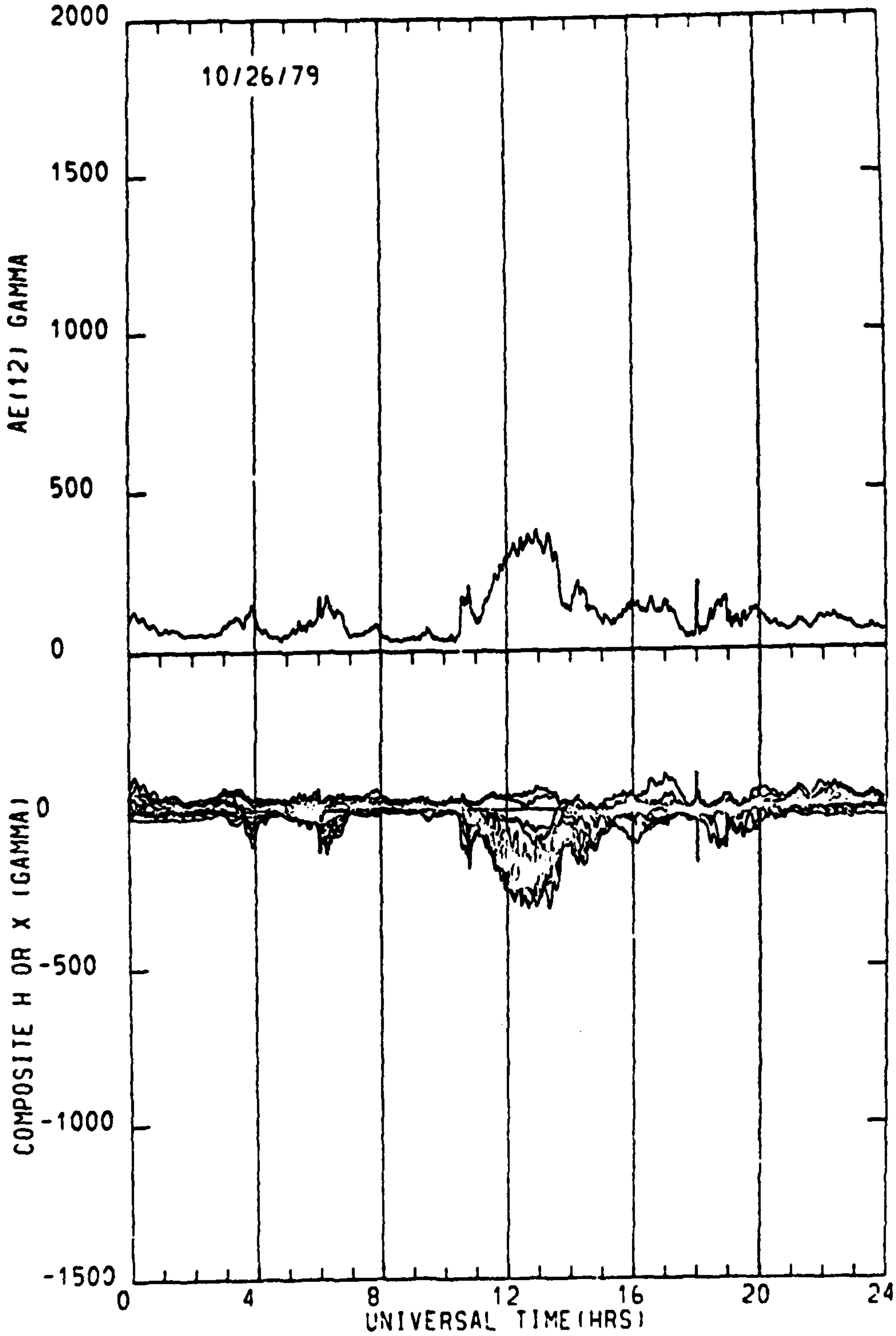
10/22/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

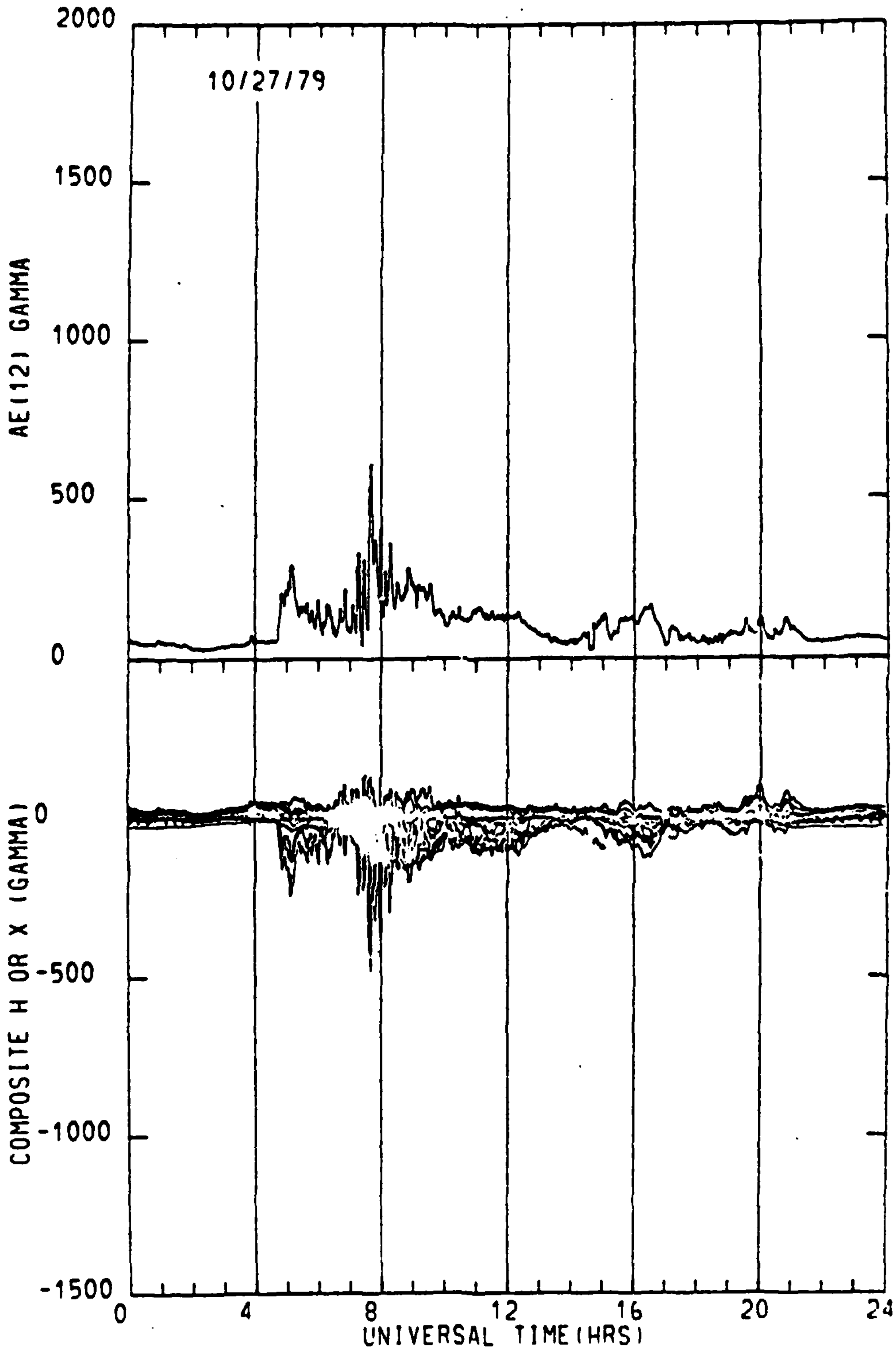

10/23/79
2000
1500
1000
500
0
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

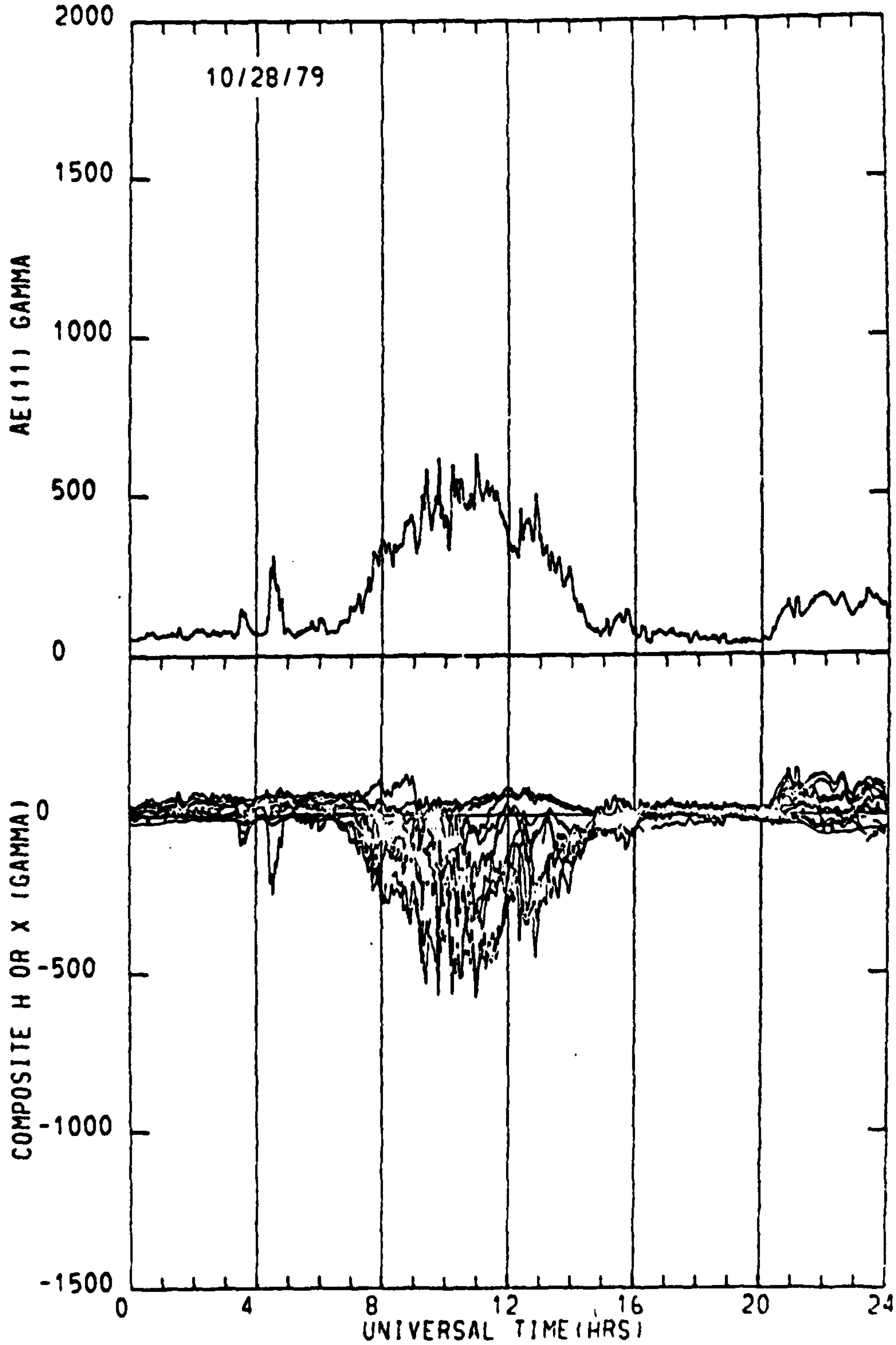

10/24/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

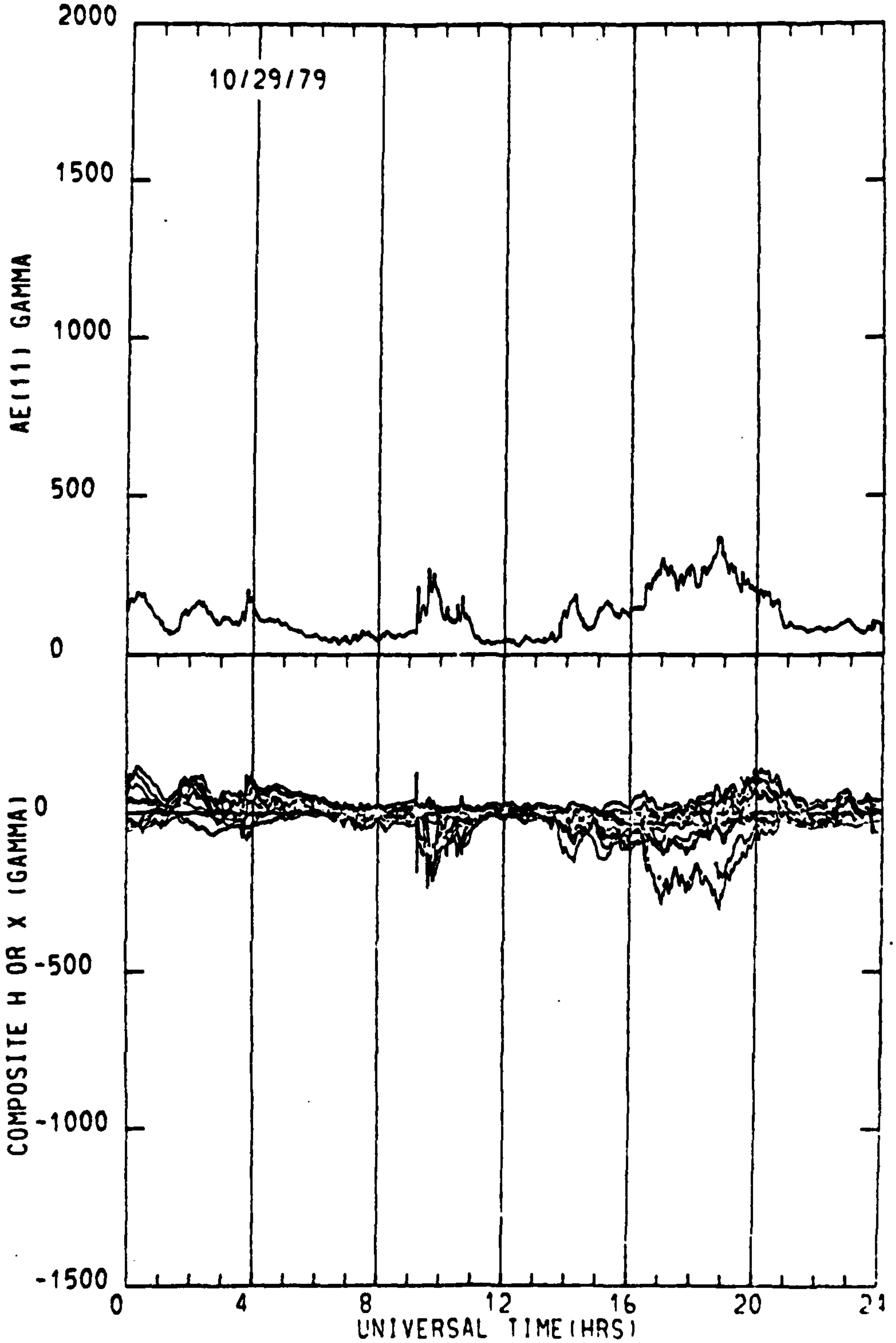


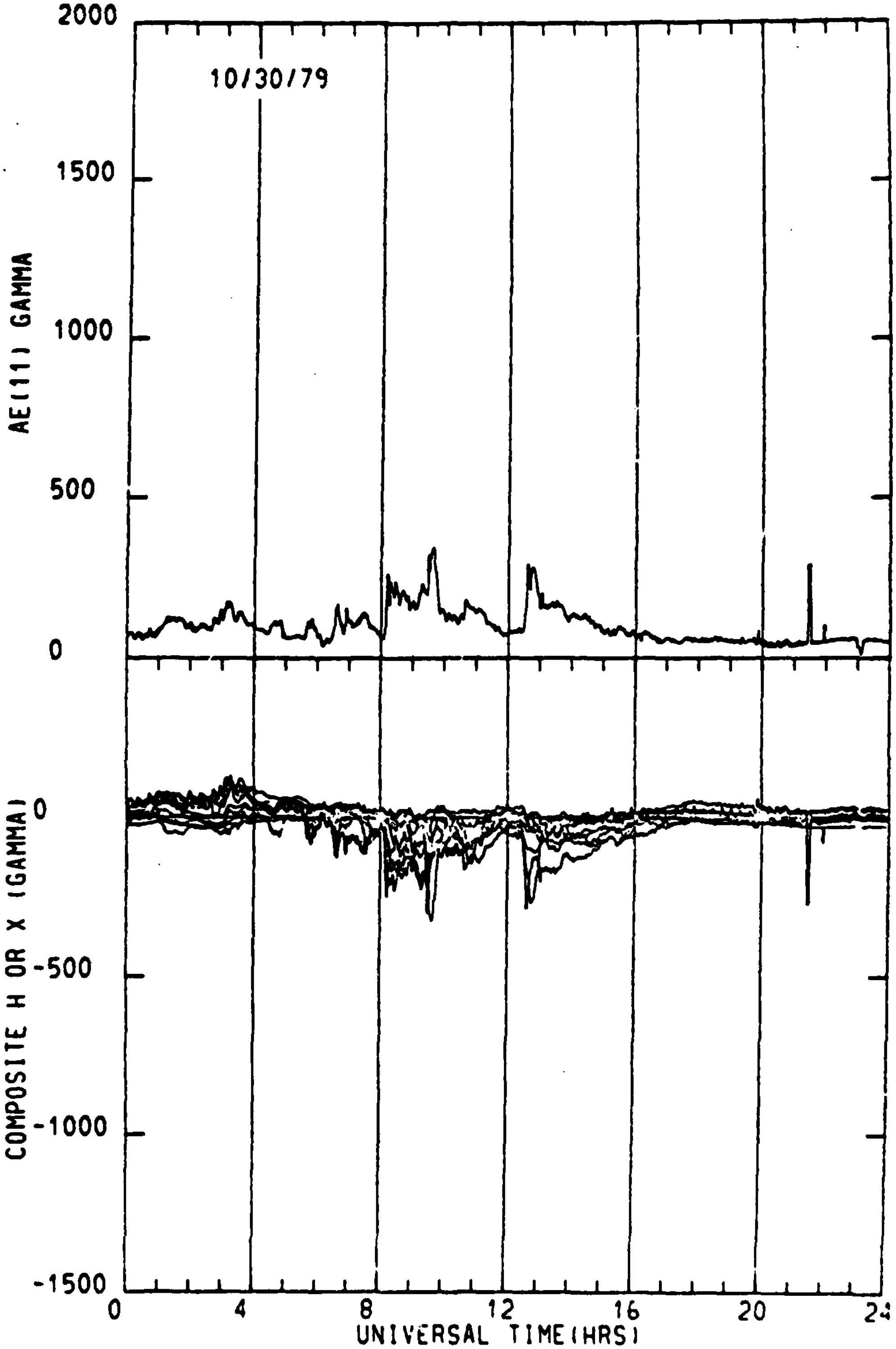
10/25/79
2000
1500
1000
500
0
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


10/26/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

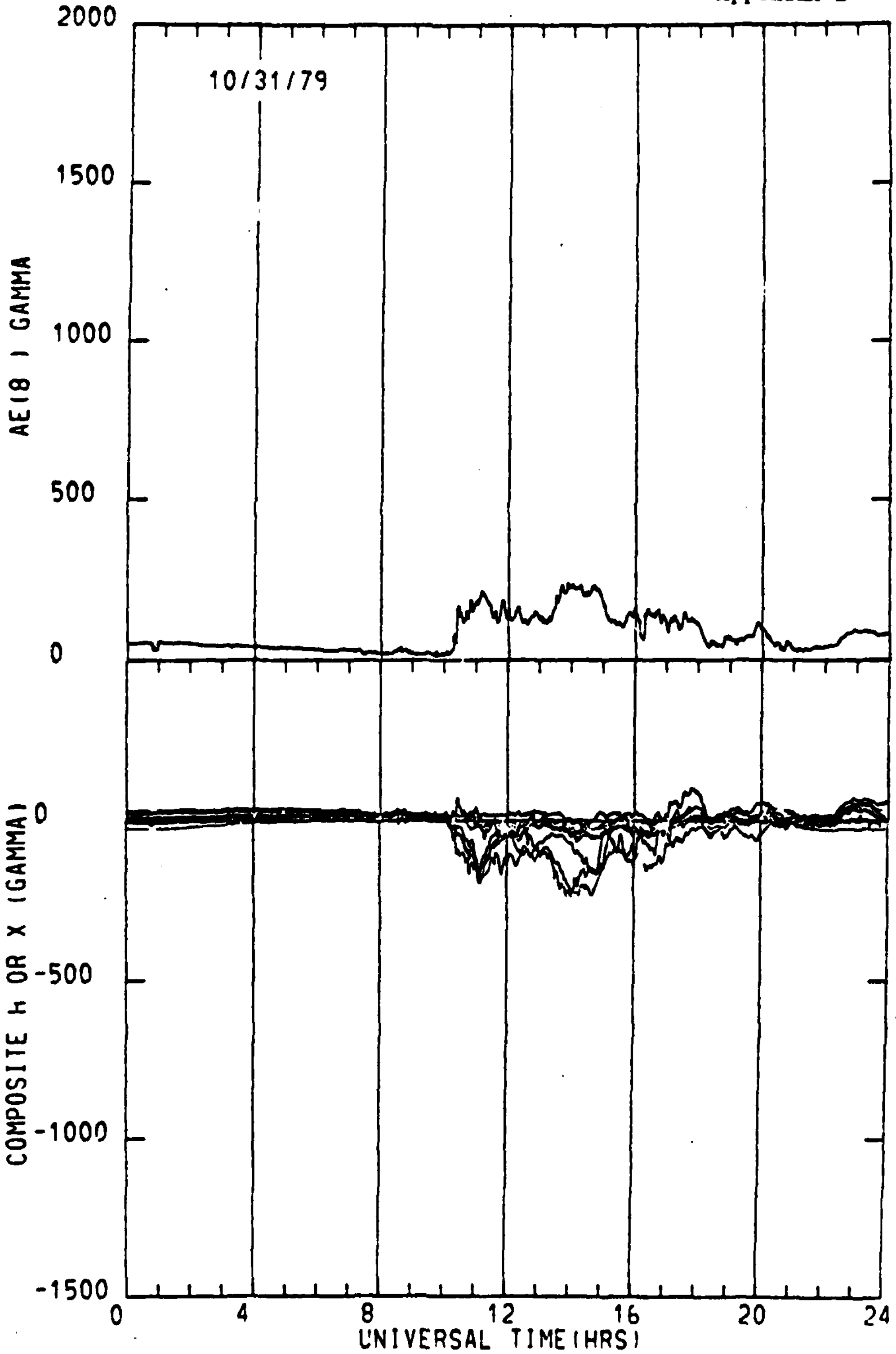

10/27/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

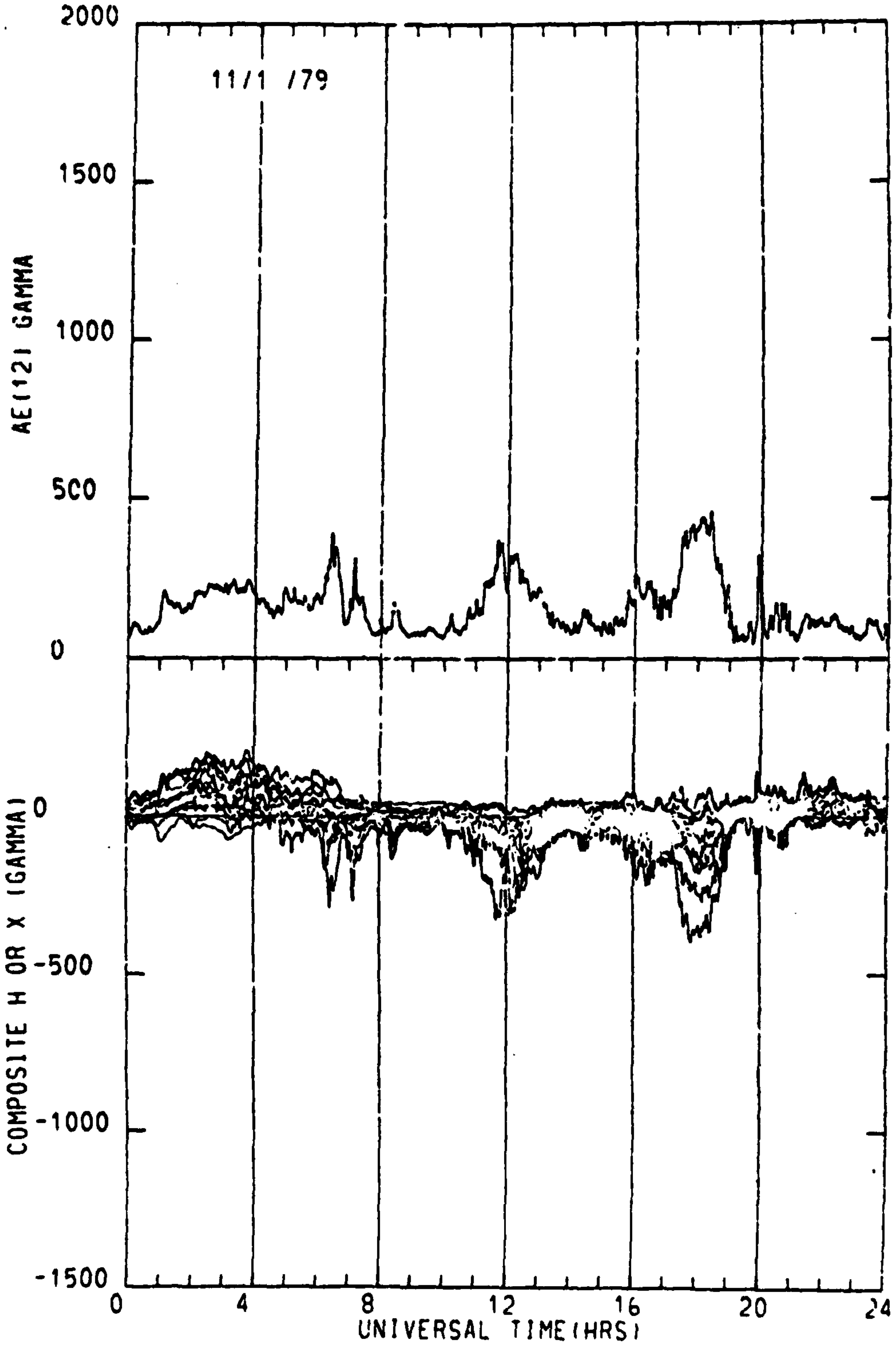

10/28/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

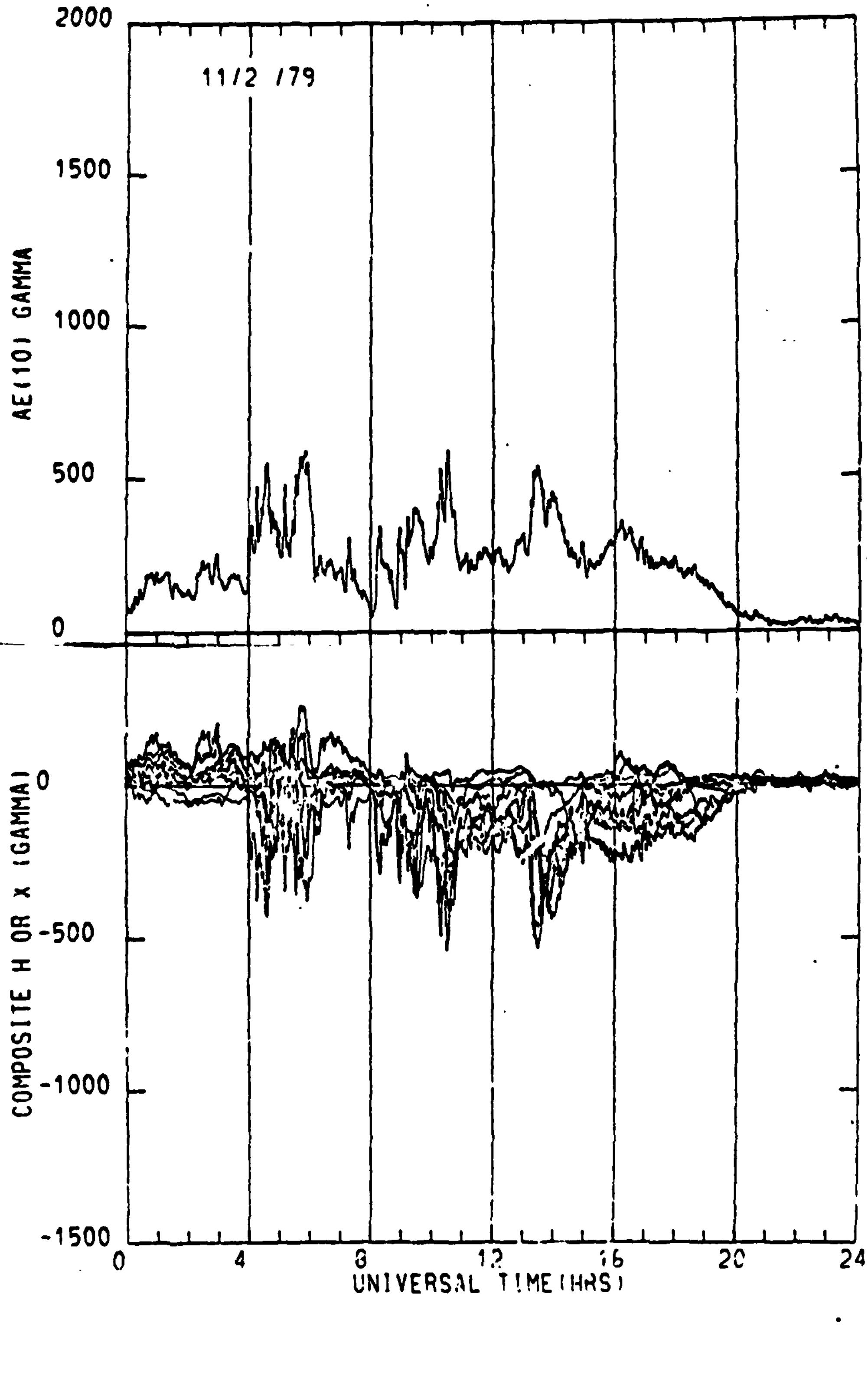

10/29/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

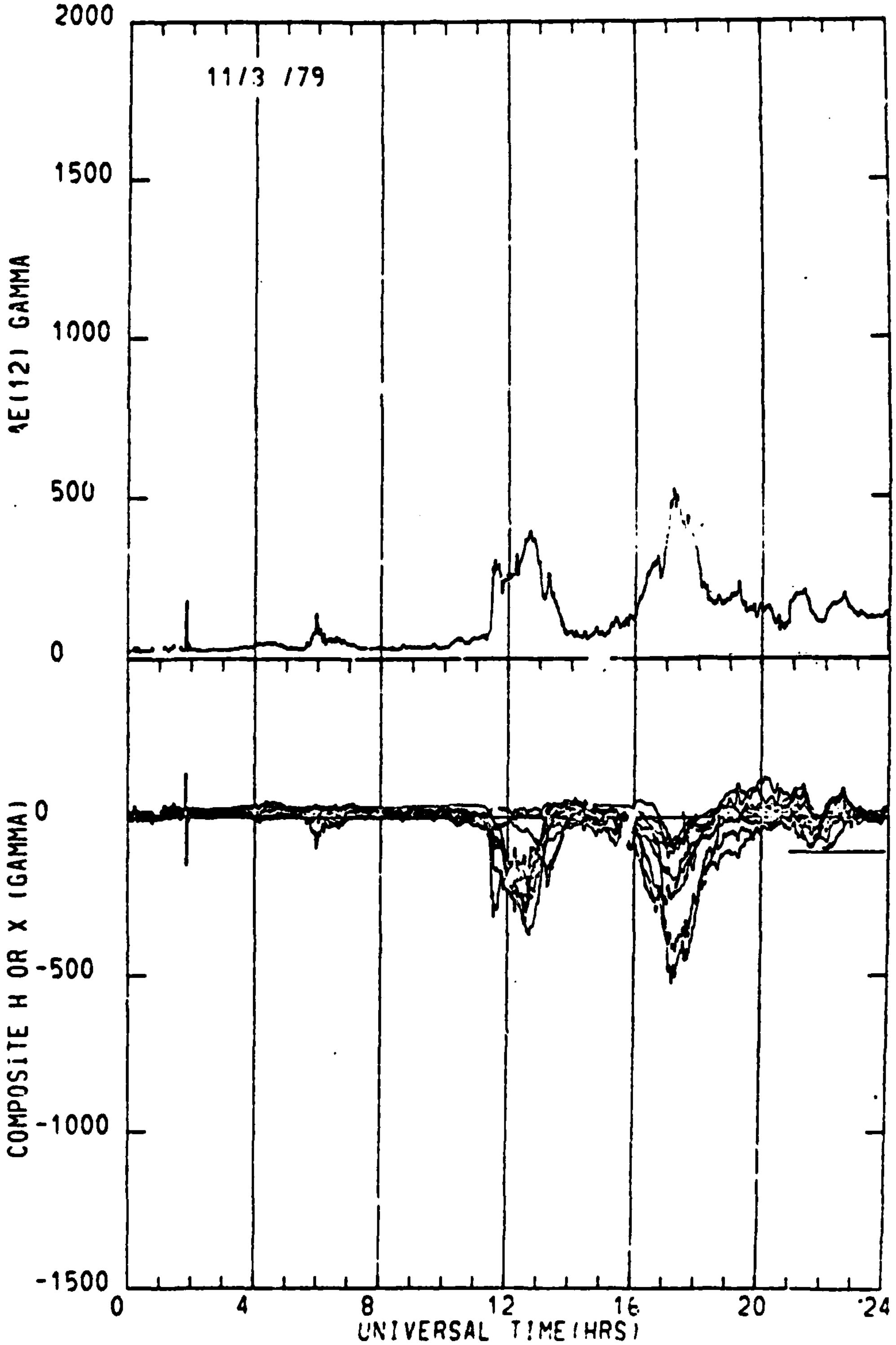


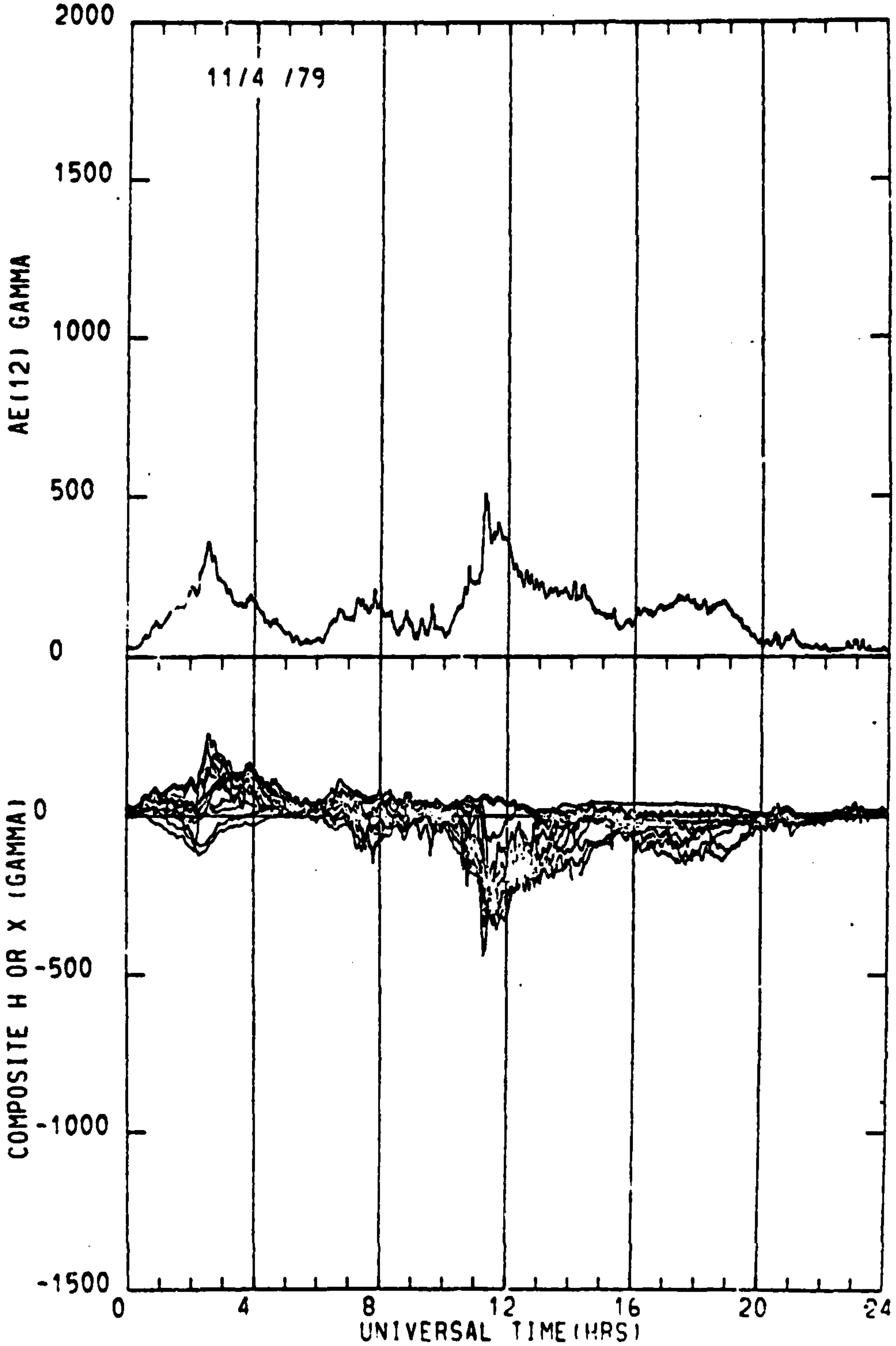
10/30/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
UNIVERSAL TIME(HRS)

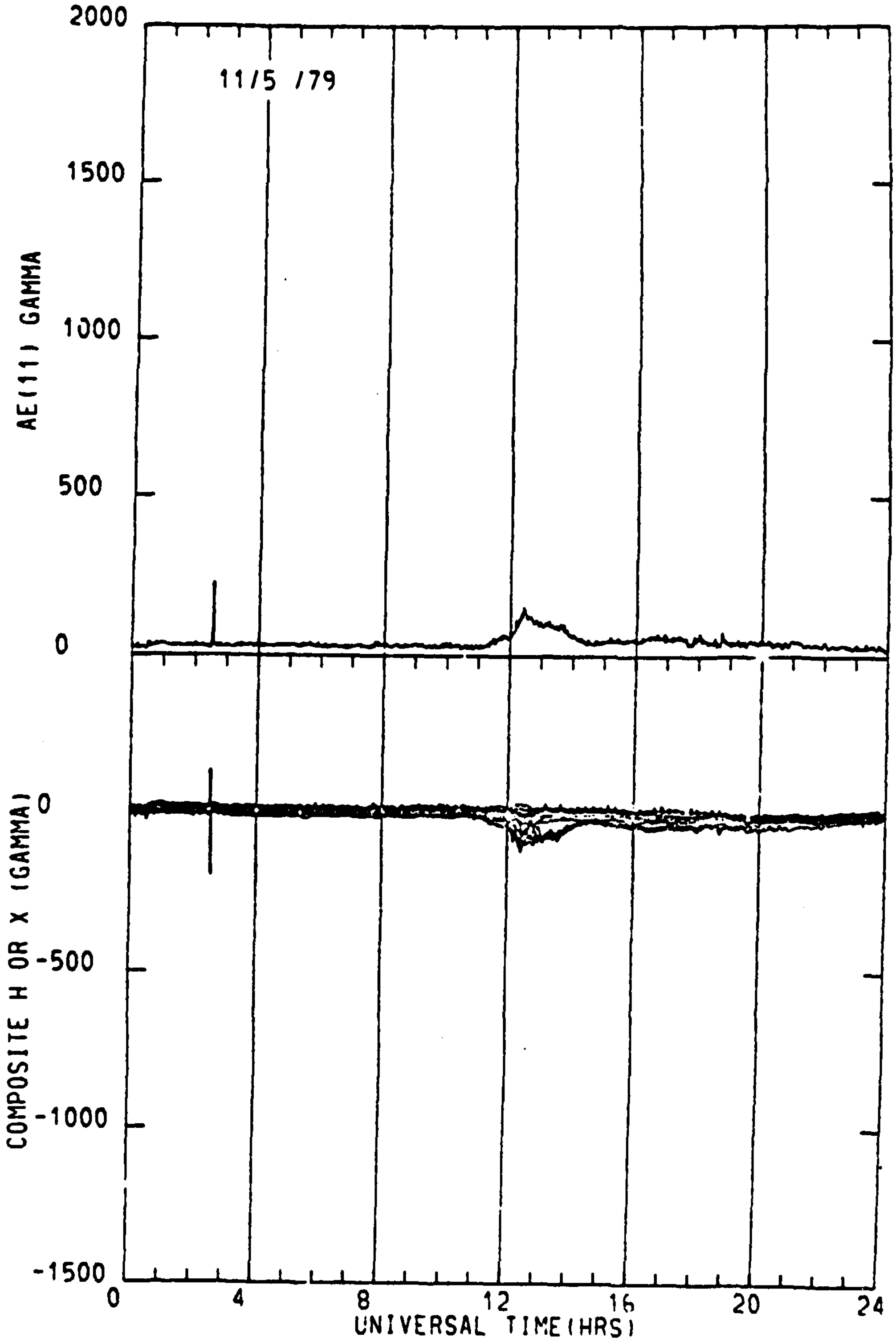

10/31/79
2000
1500
1000
500
0
AE(8) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

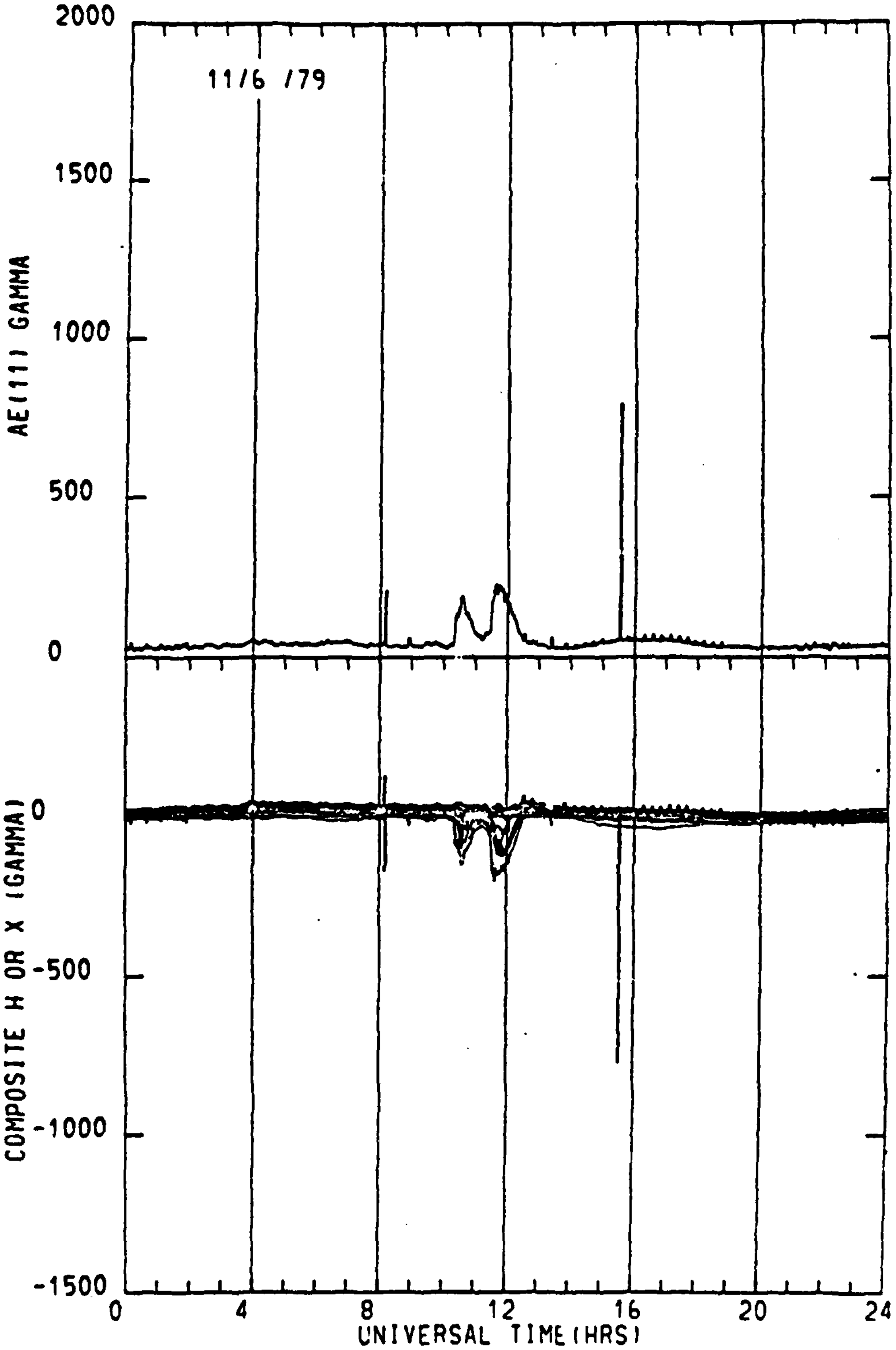

11/1 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

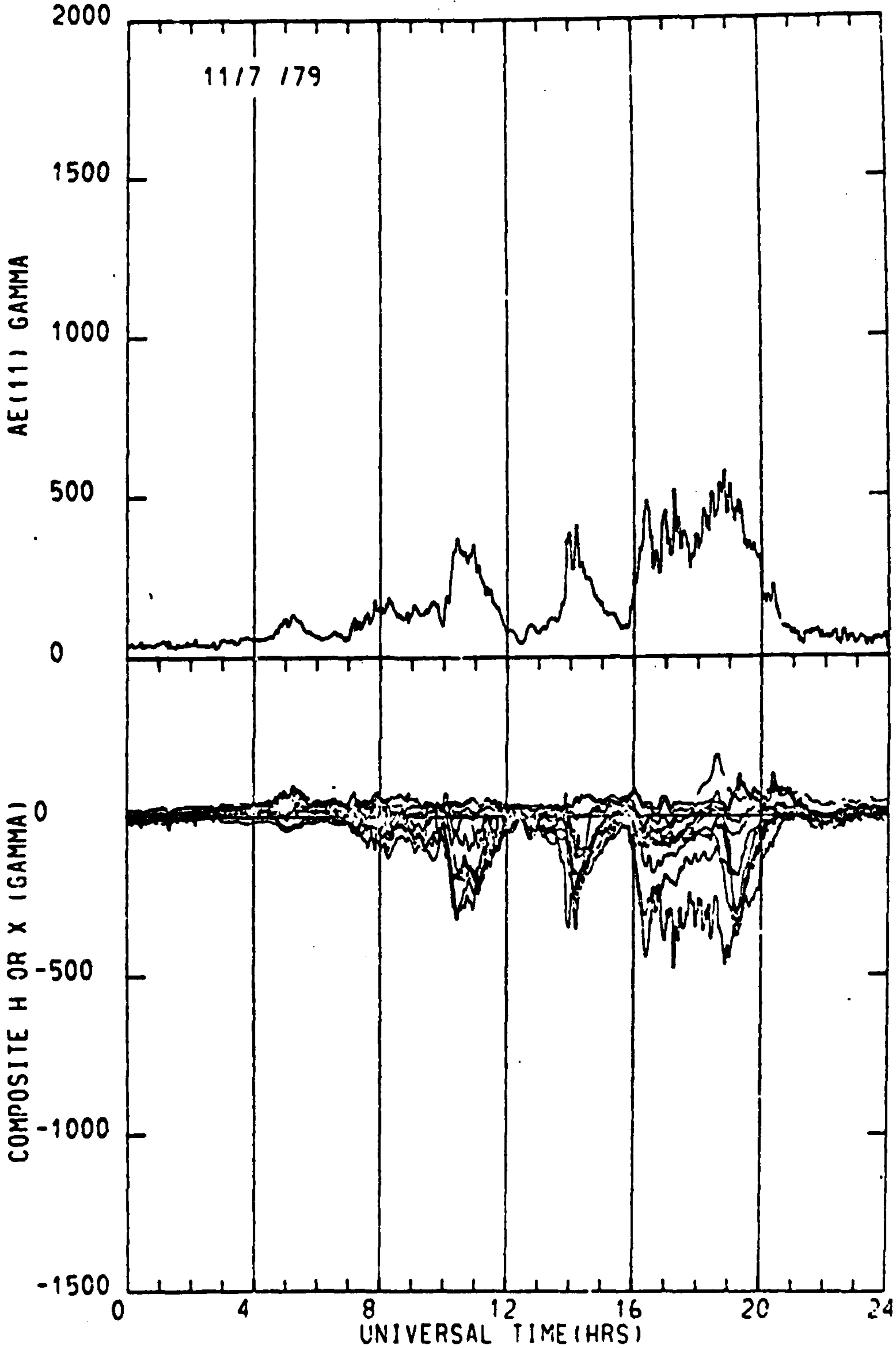

11/2 /79
2000
1500
1000
500
0
AE(10) GAMMA
COMPOSITE H OR x (GAMMA)
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

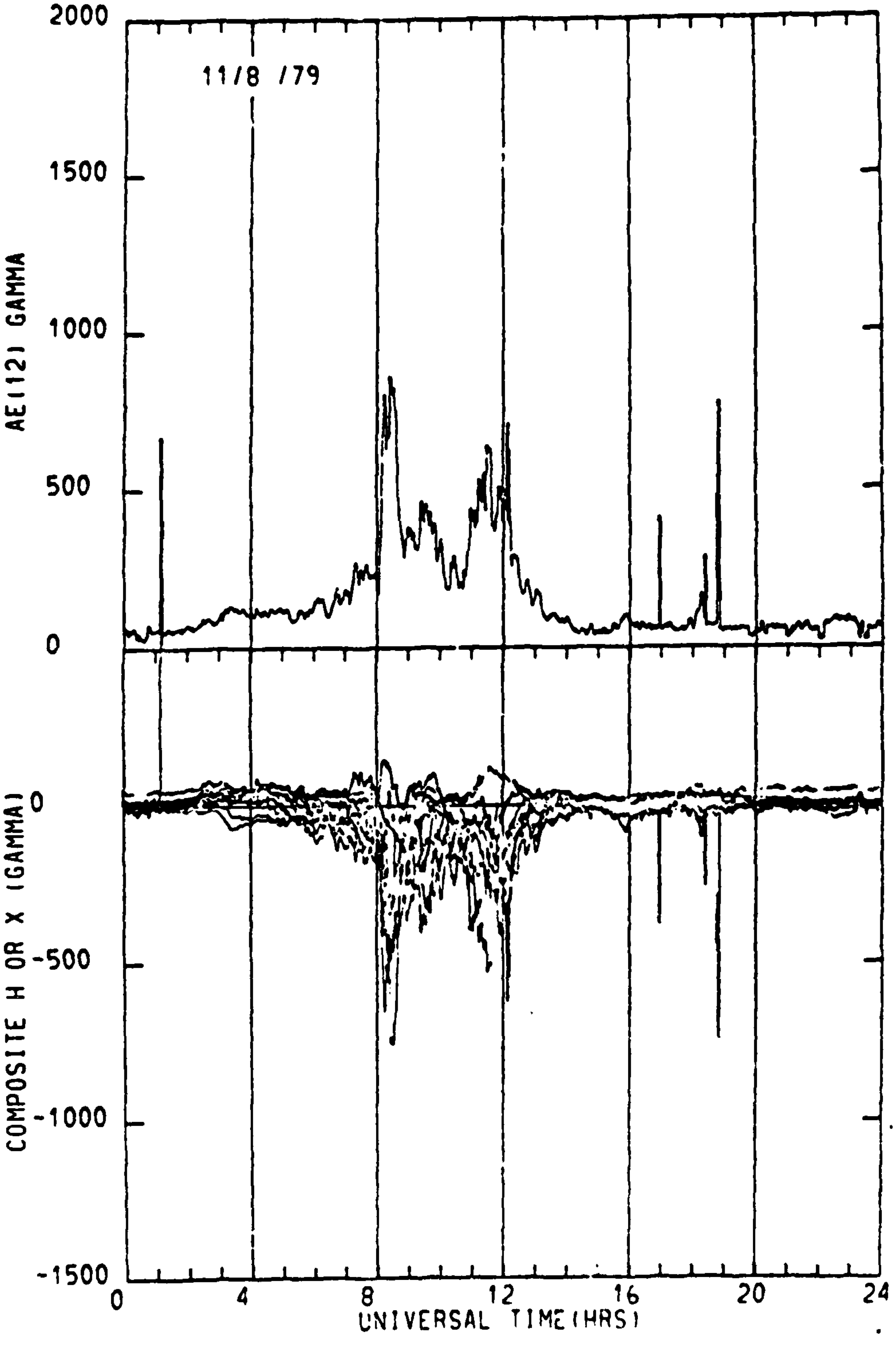

11/3 /79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

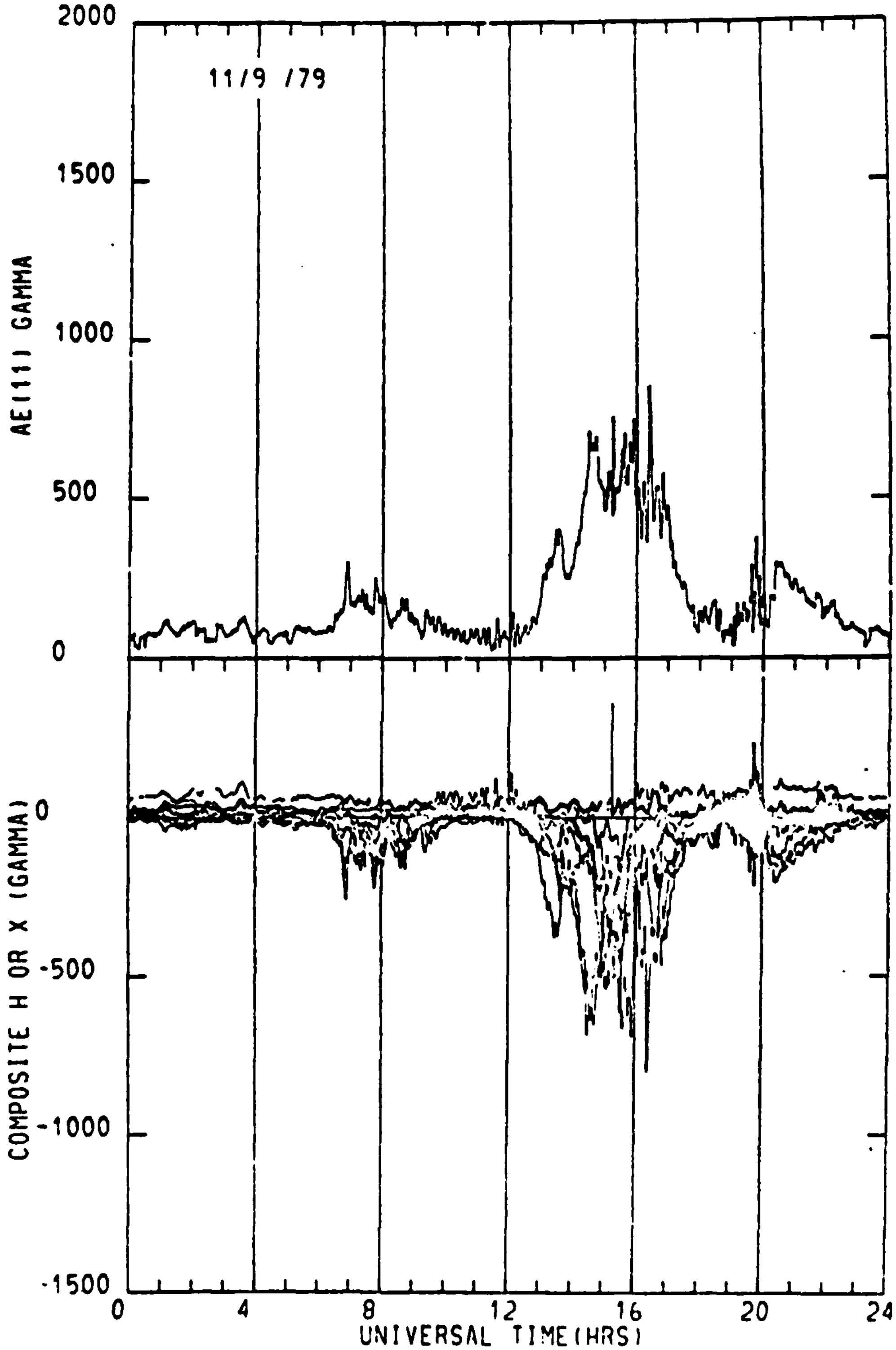

11/4 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

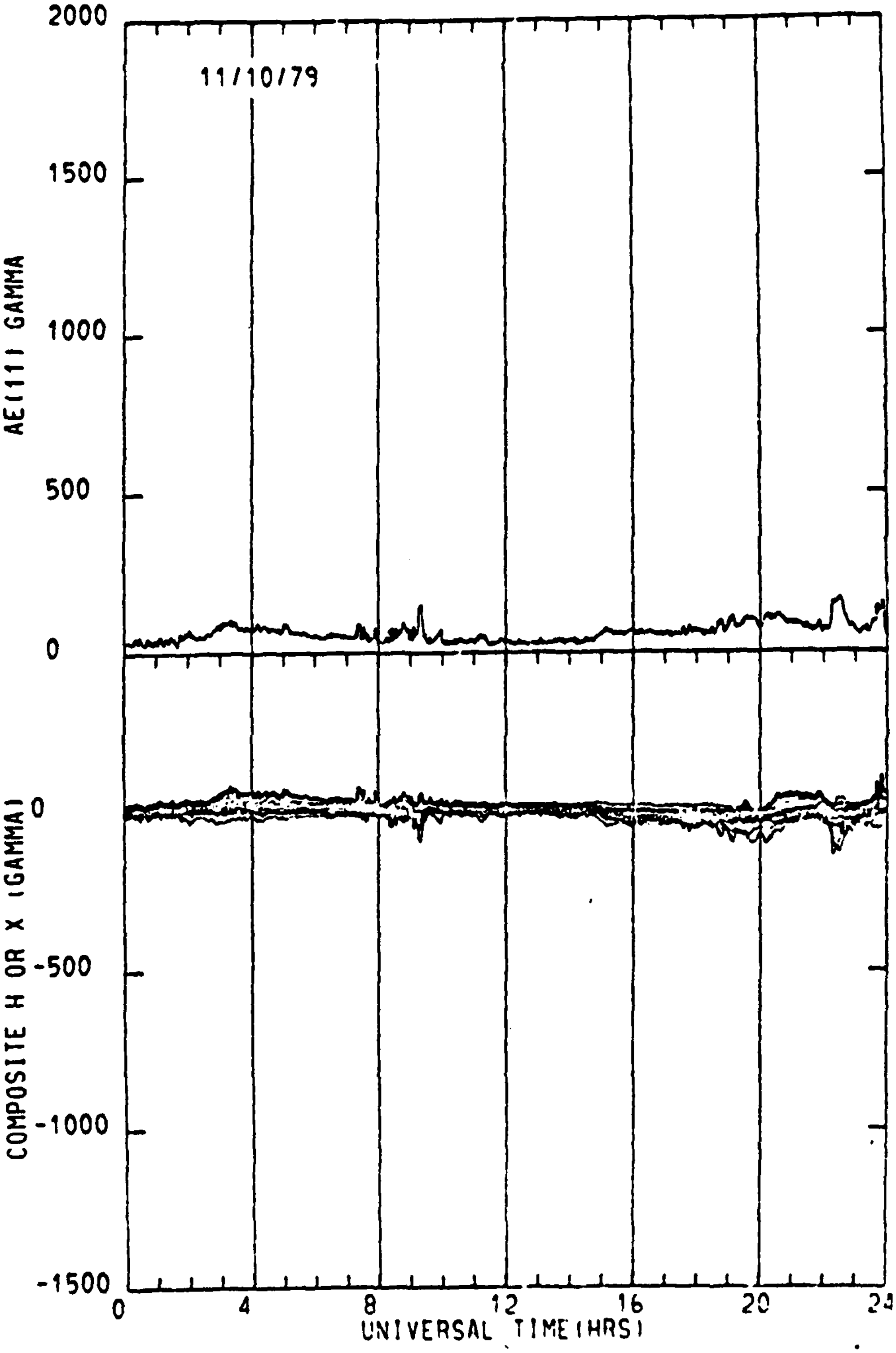

11/5 /79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

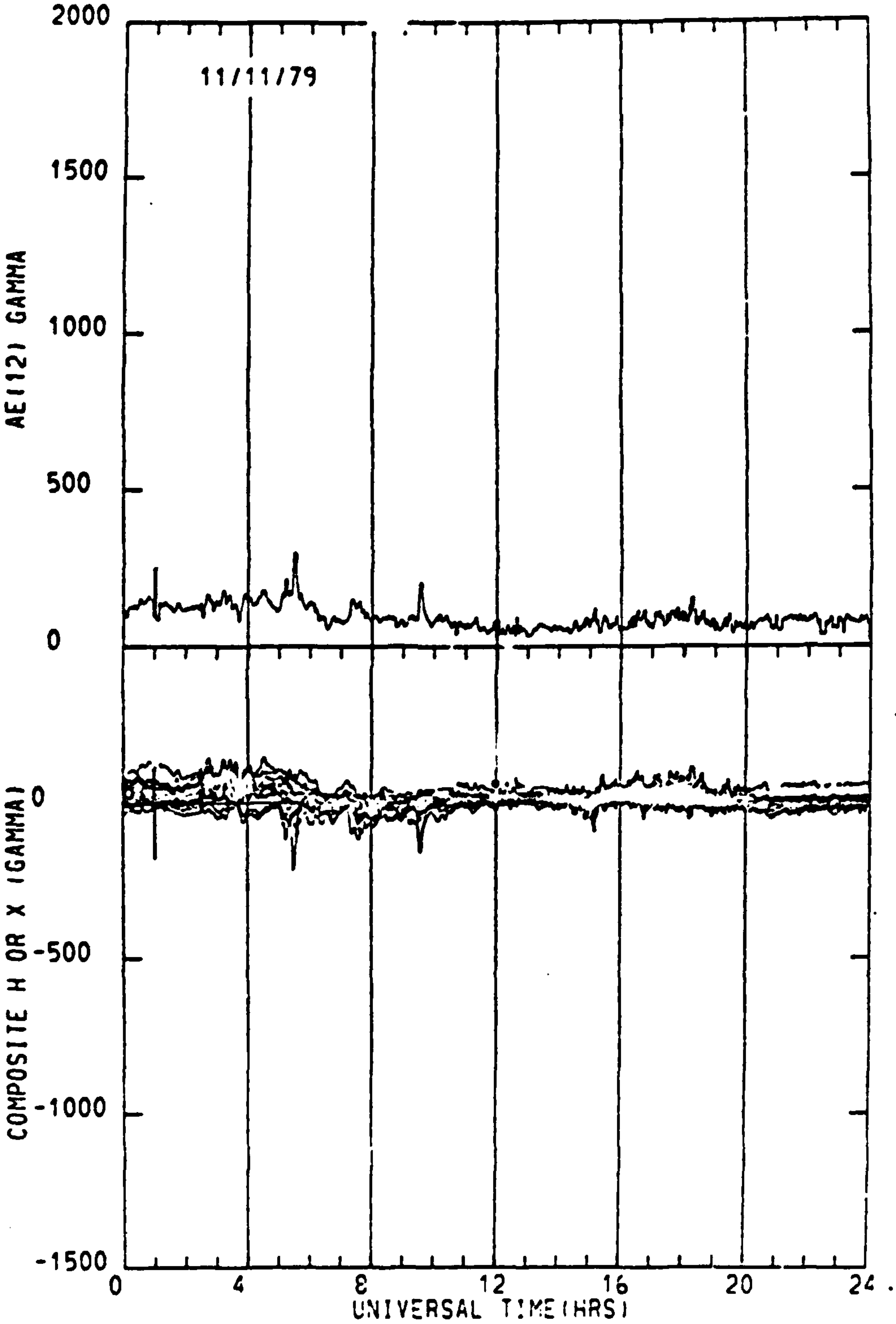

2000
1500
1000
500
0
11/6 /79
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

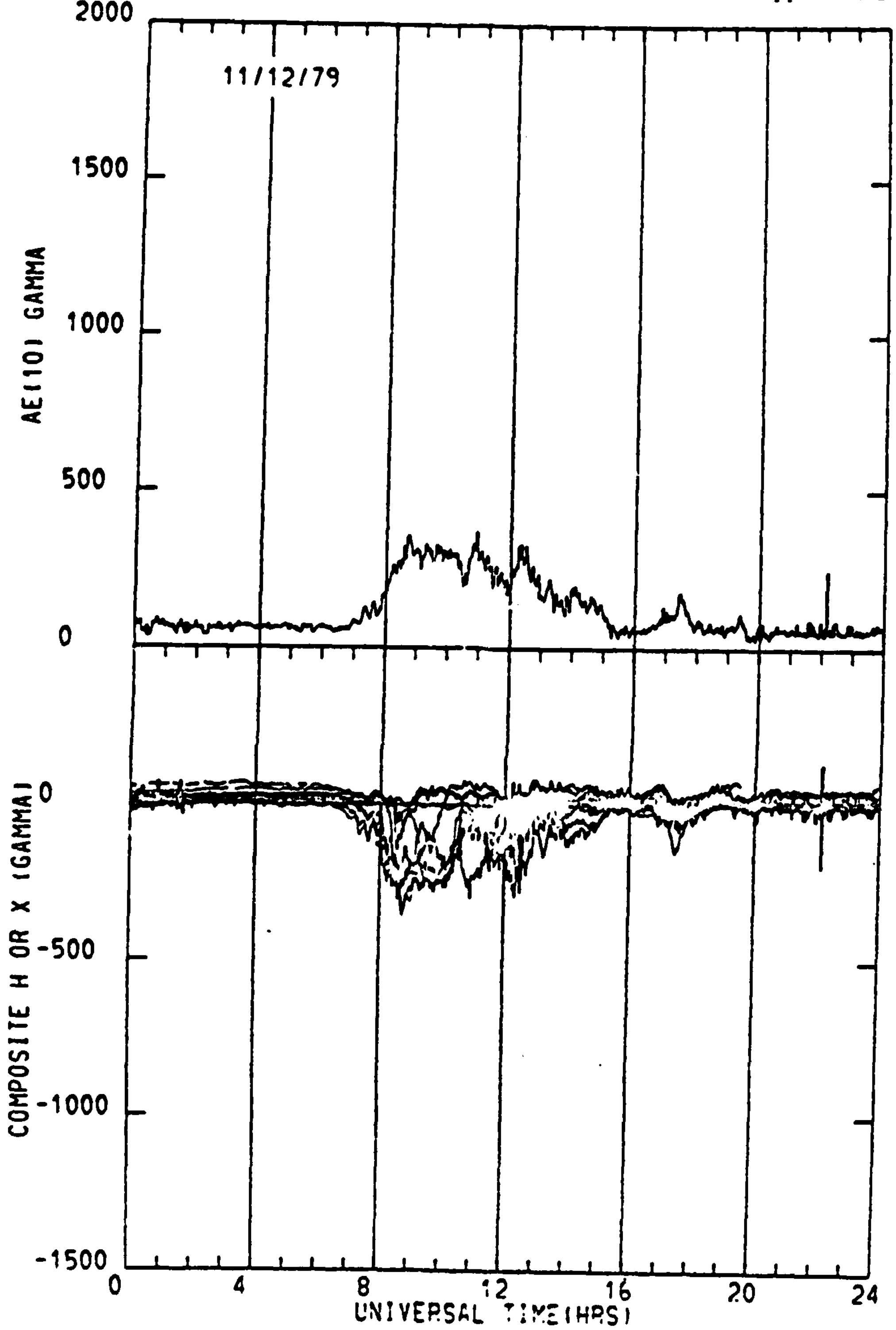

11/7 /79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

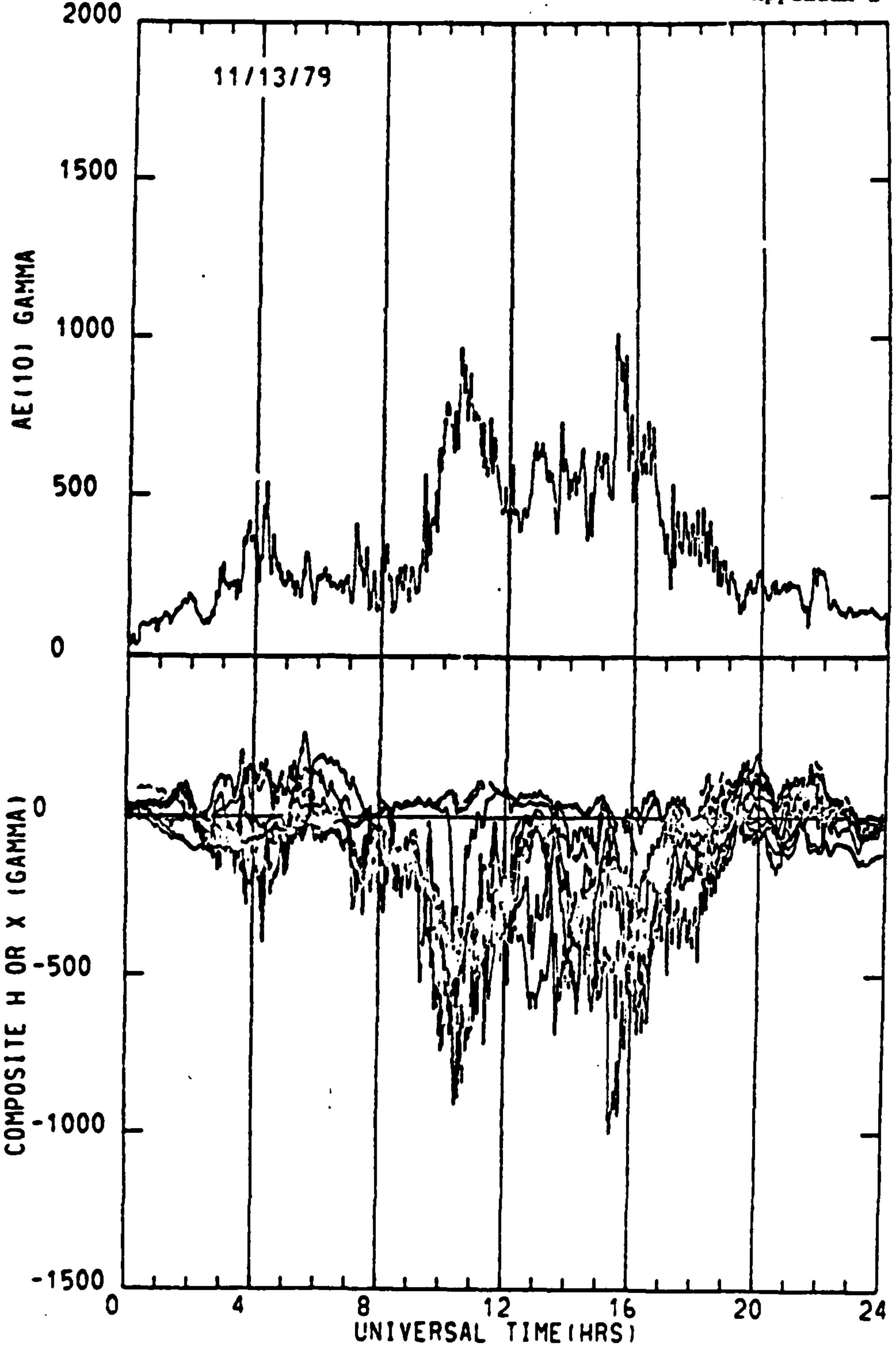

11/8 /79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


11/9 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

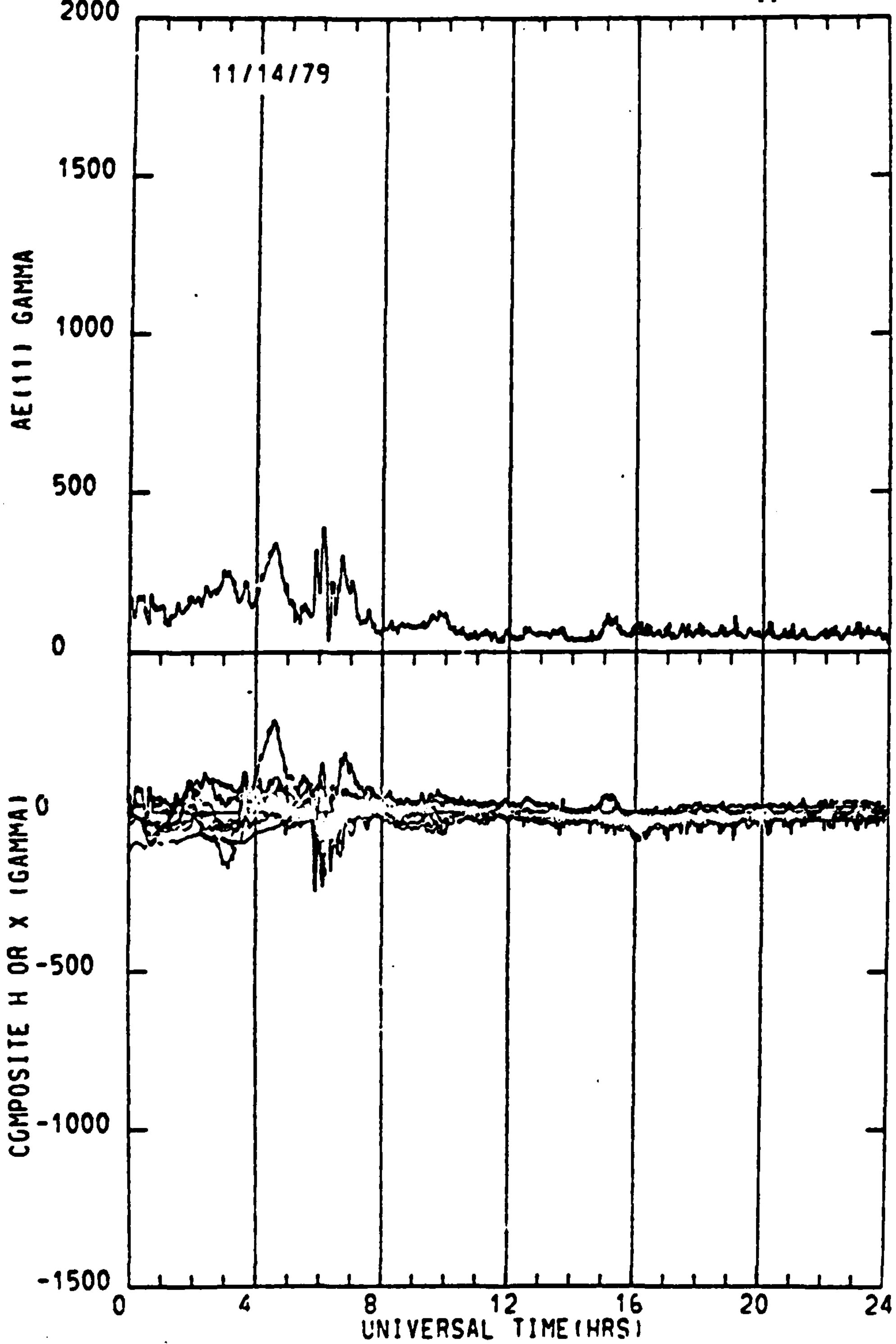

11/10/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


11/11/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


11/12/79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

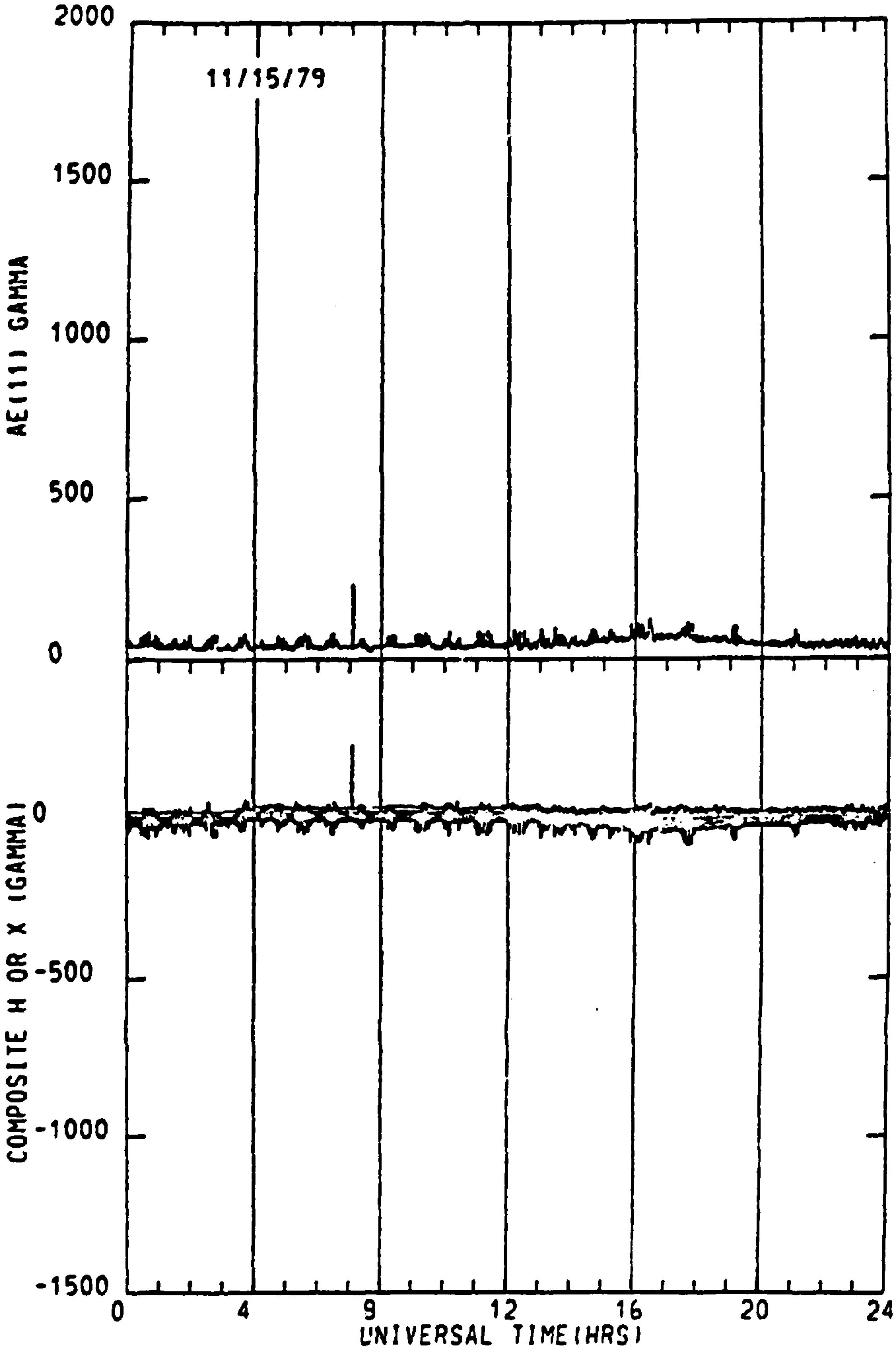

11/13/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

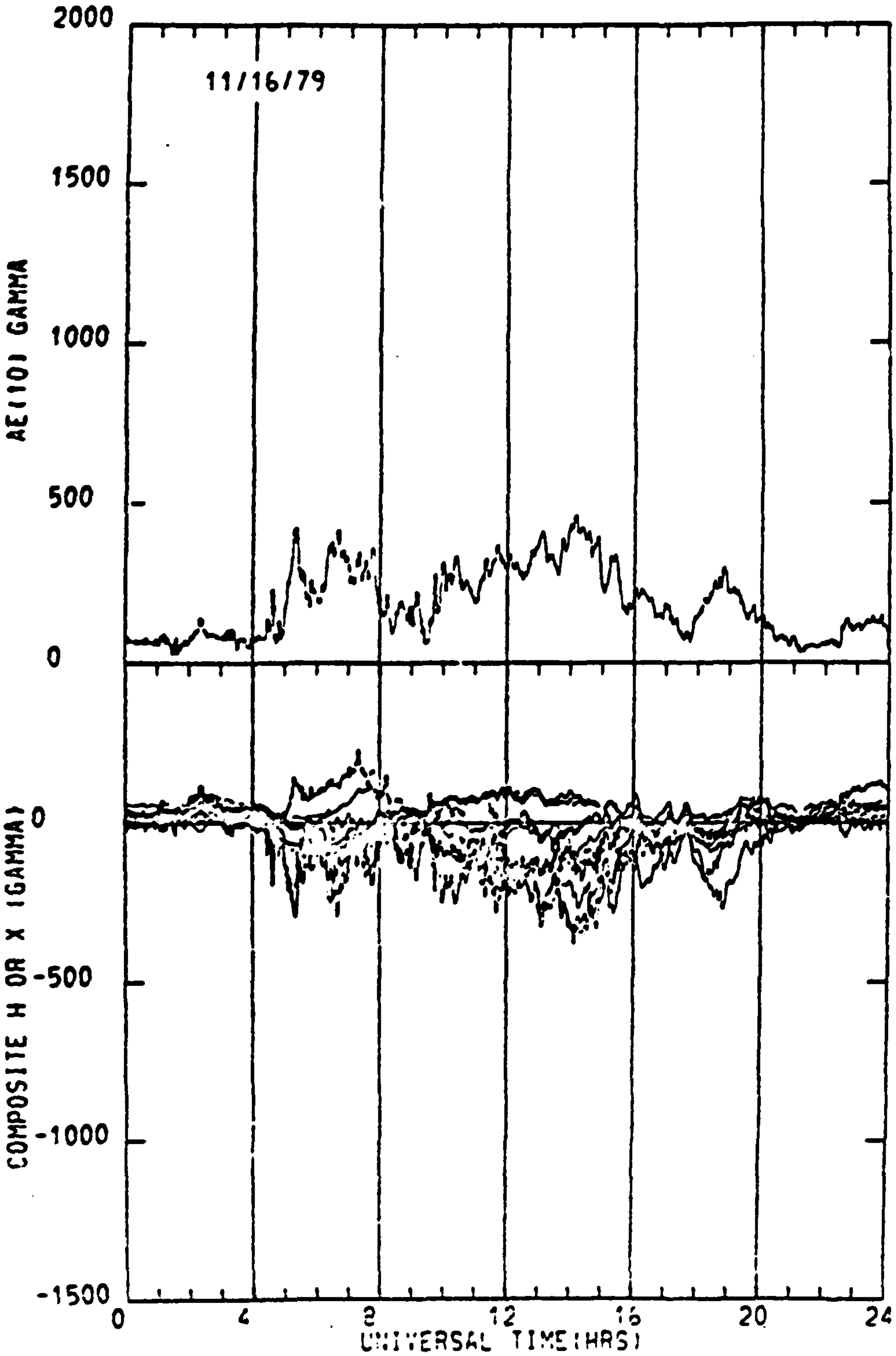
2000

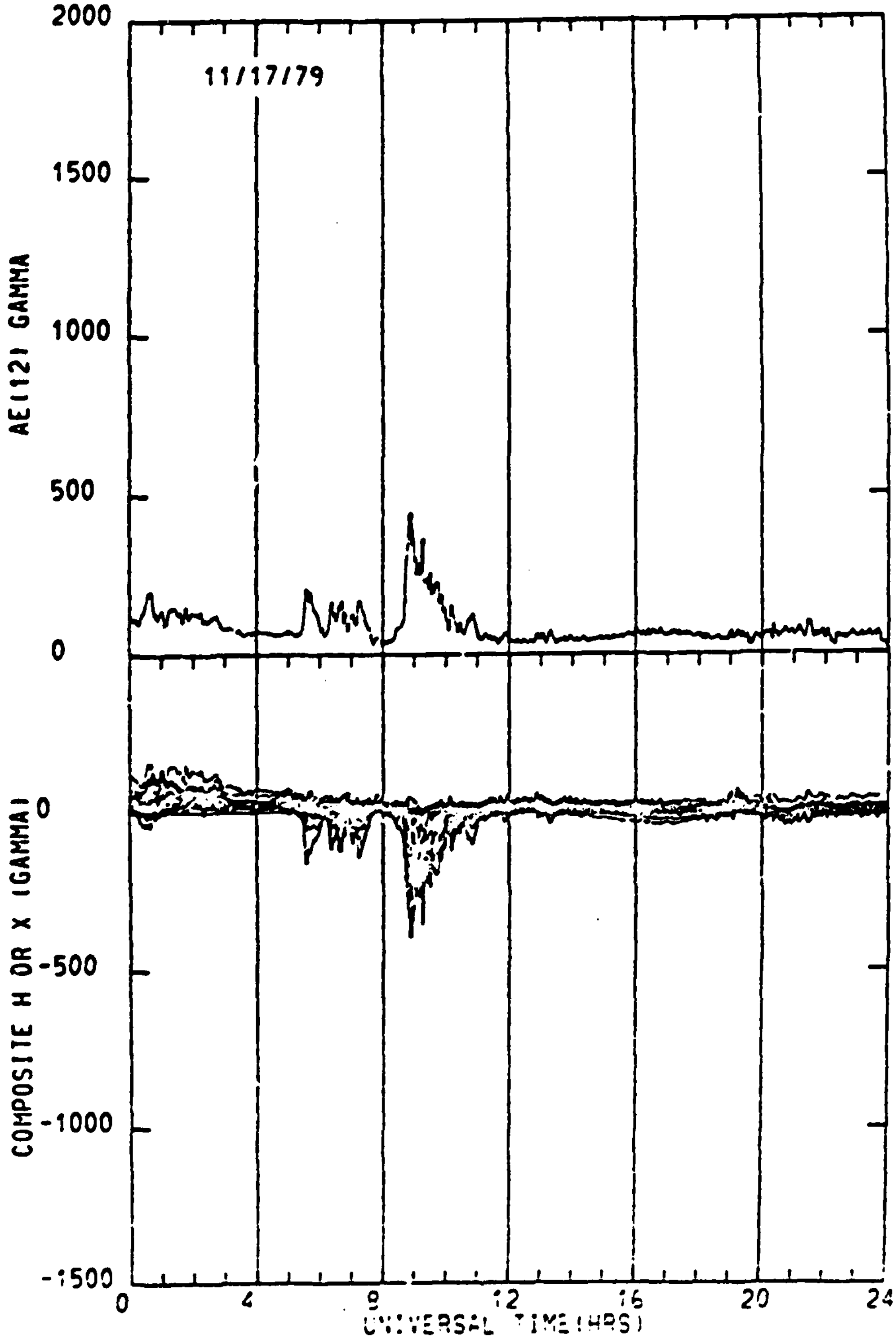


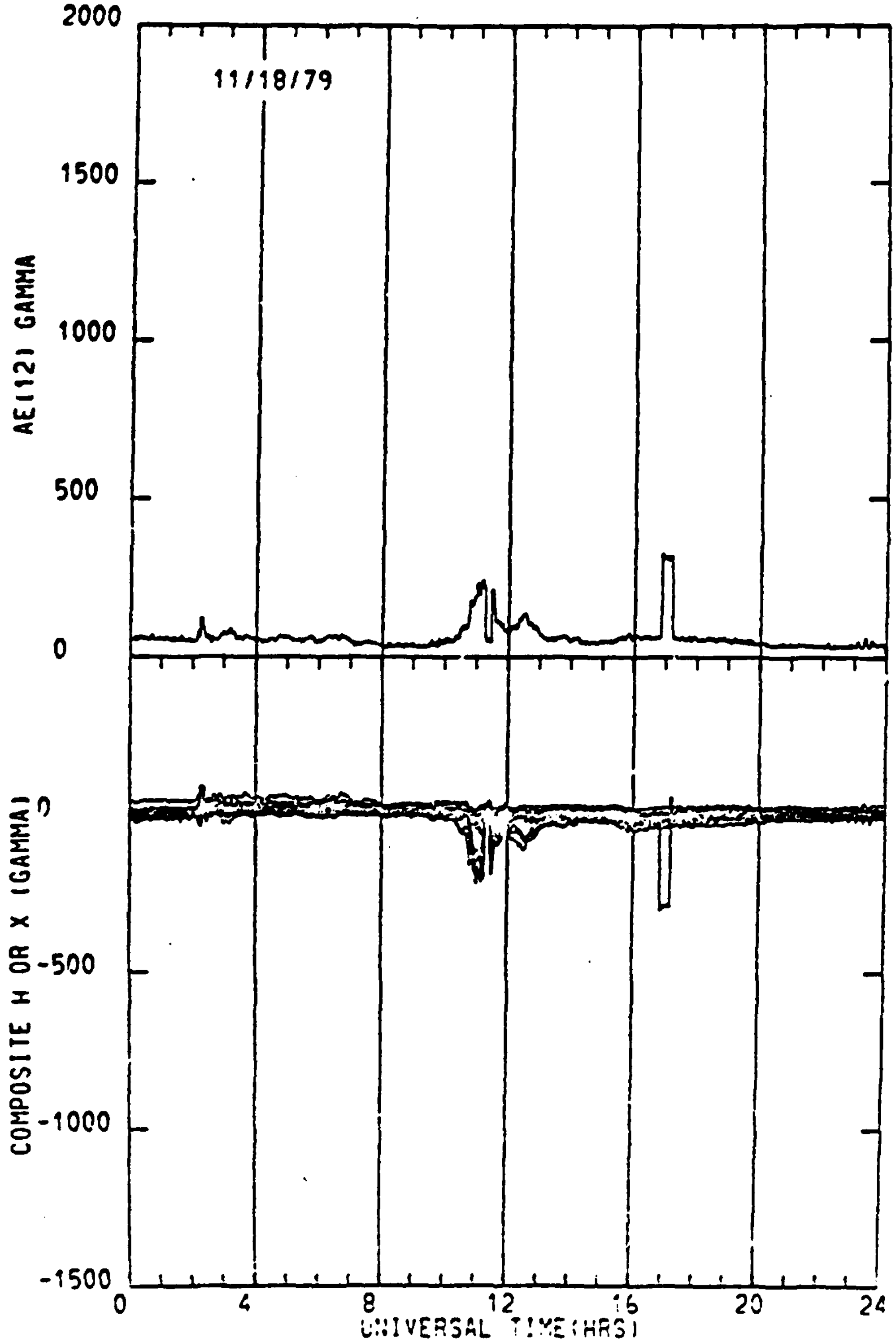
11/14/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

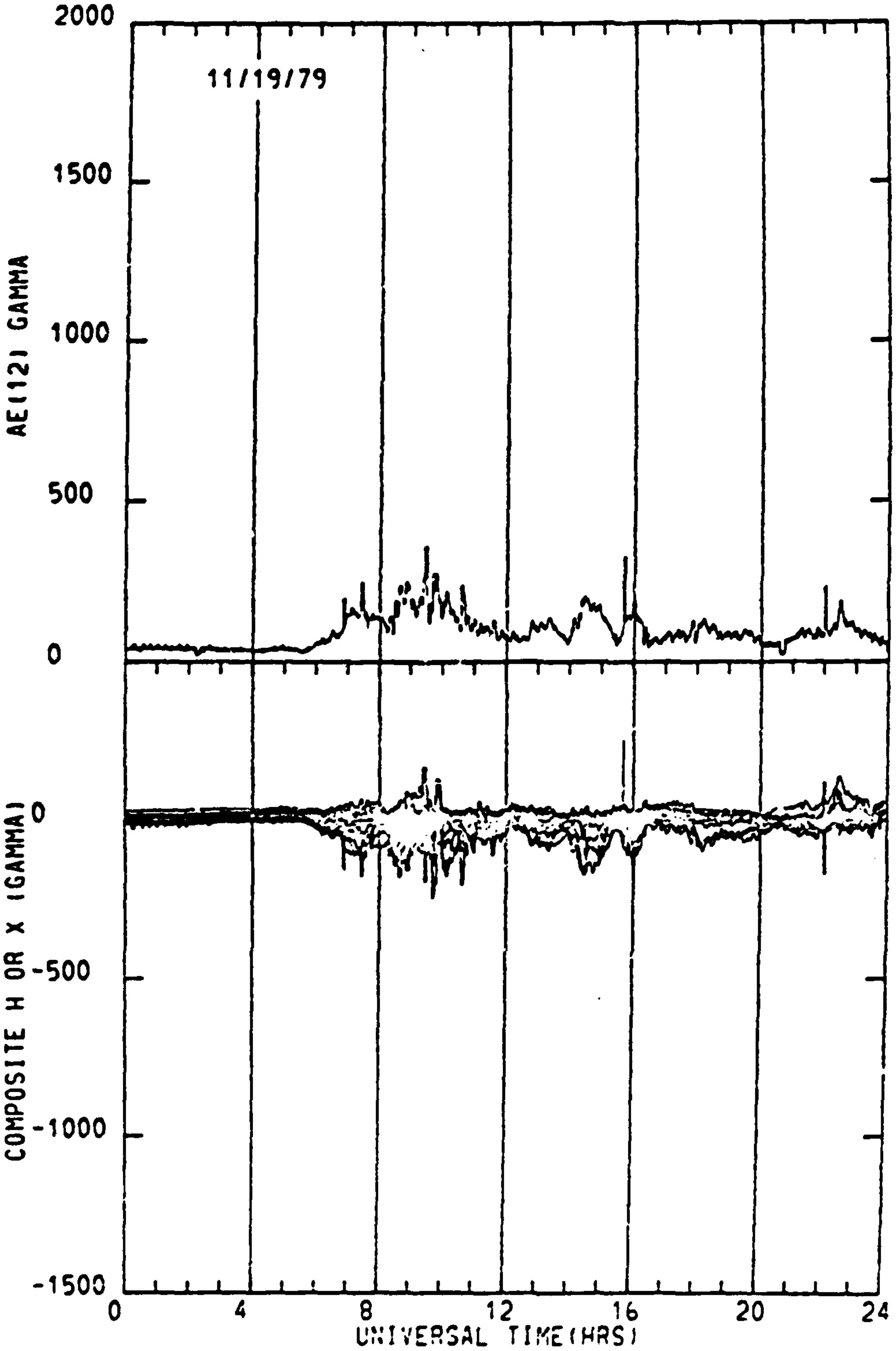
2000

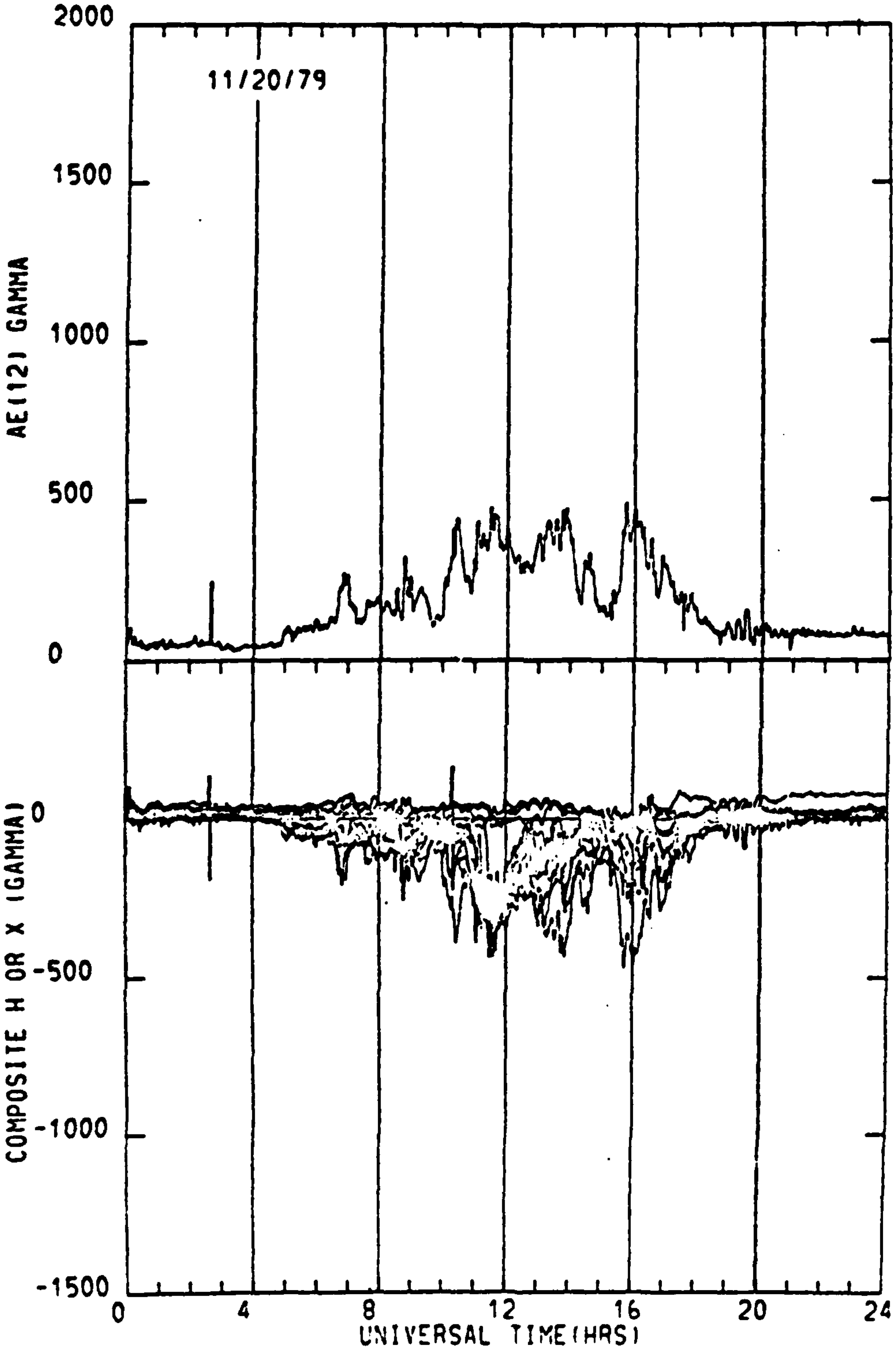

2000
11/15/79
1500
AE(11) GAMMA
1000
500
0
0
COMPOSITE H OR X (GAMMA)
-500
-1000
-1500
0
4
9
12
16
20
24
UNIVERSAL TIME(HRS)

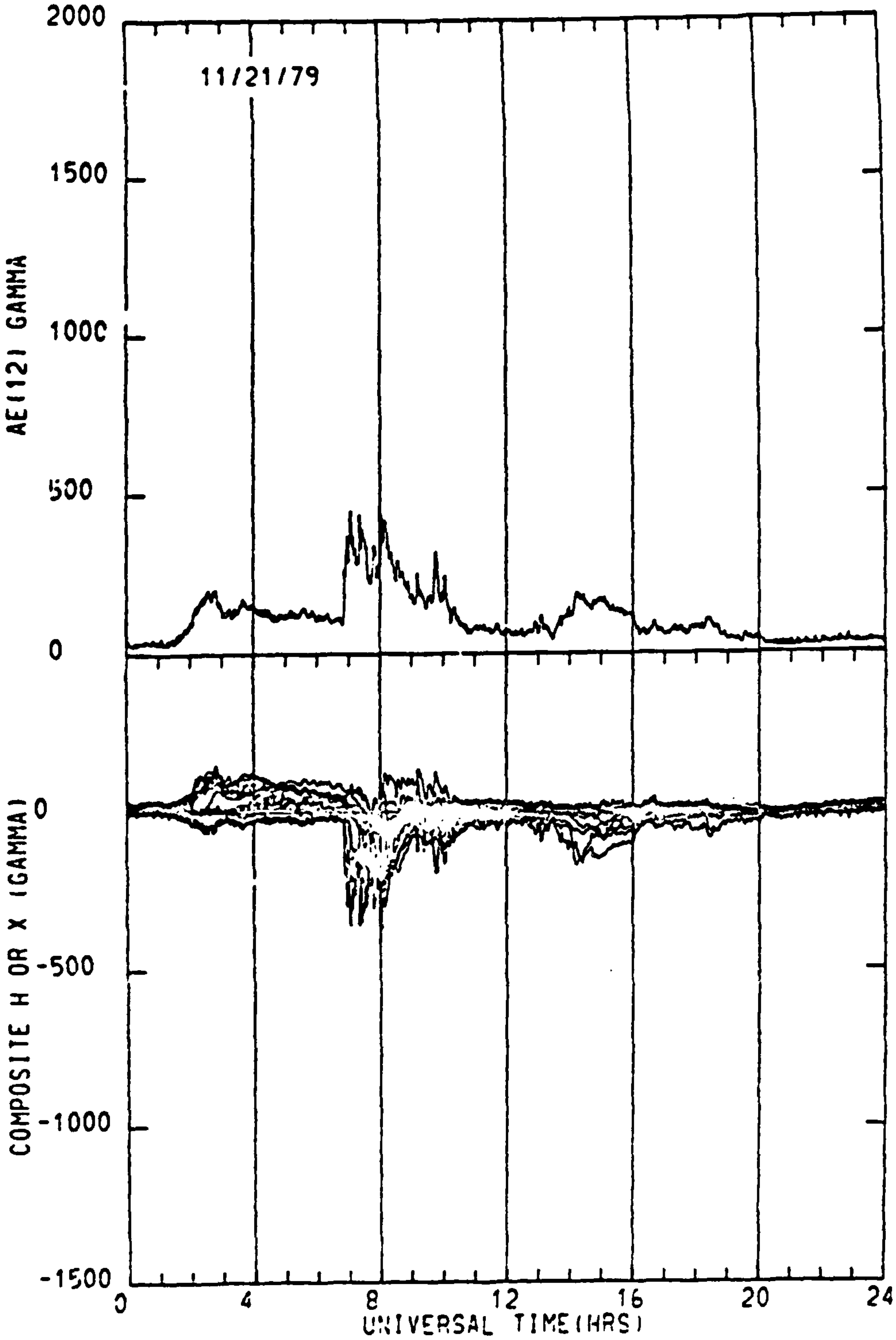

11/16/79
2000
1500
1000
500
0
AE(10) GAMMA
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

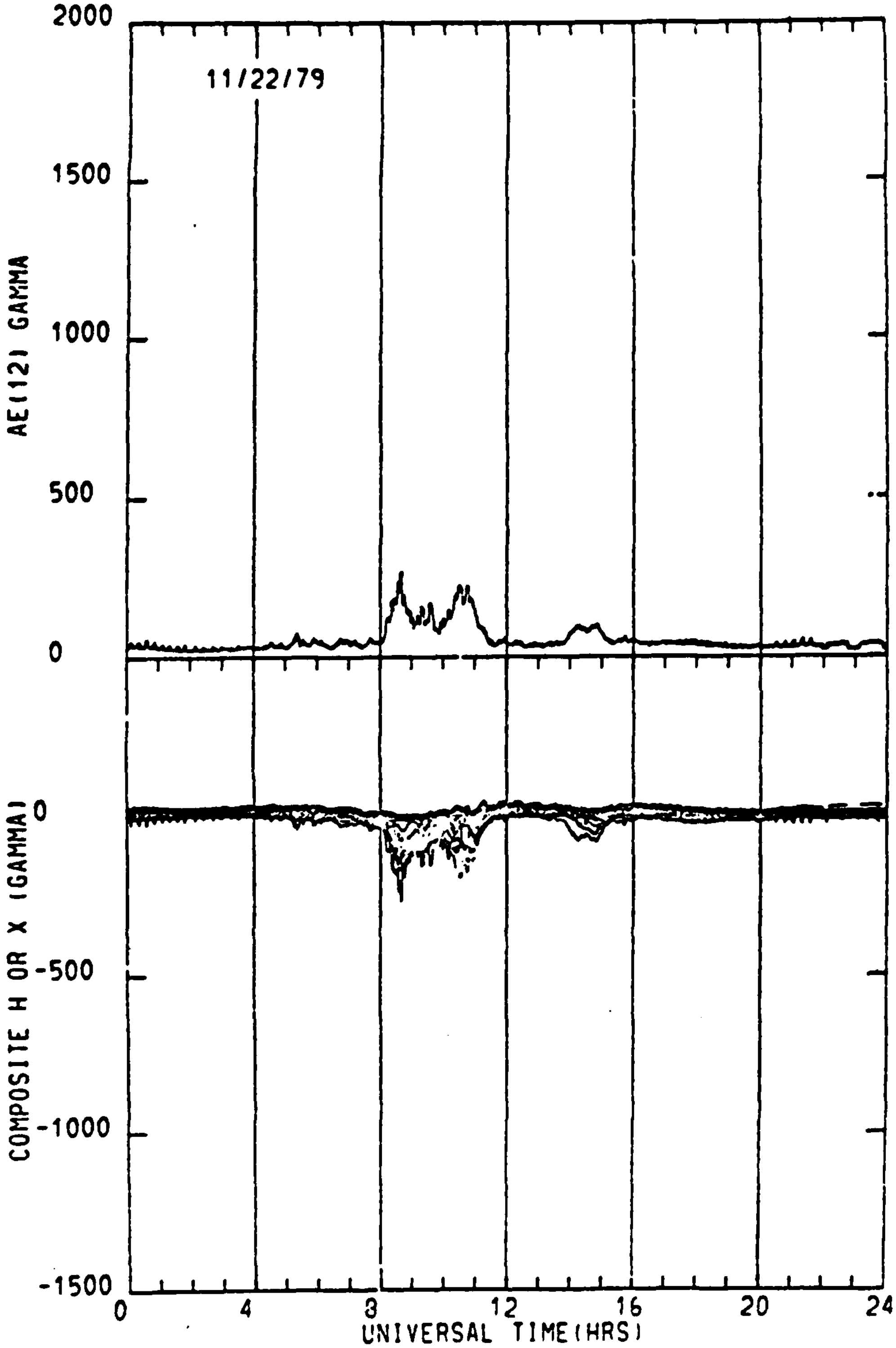

11/17/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

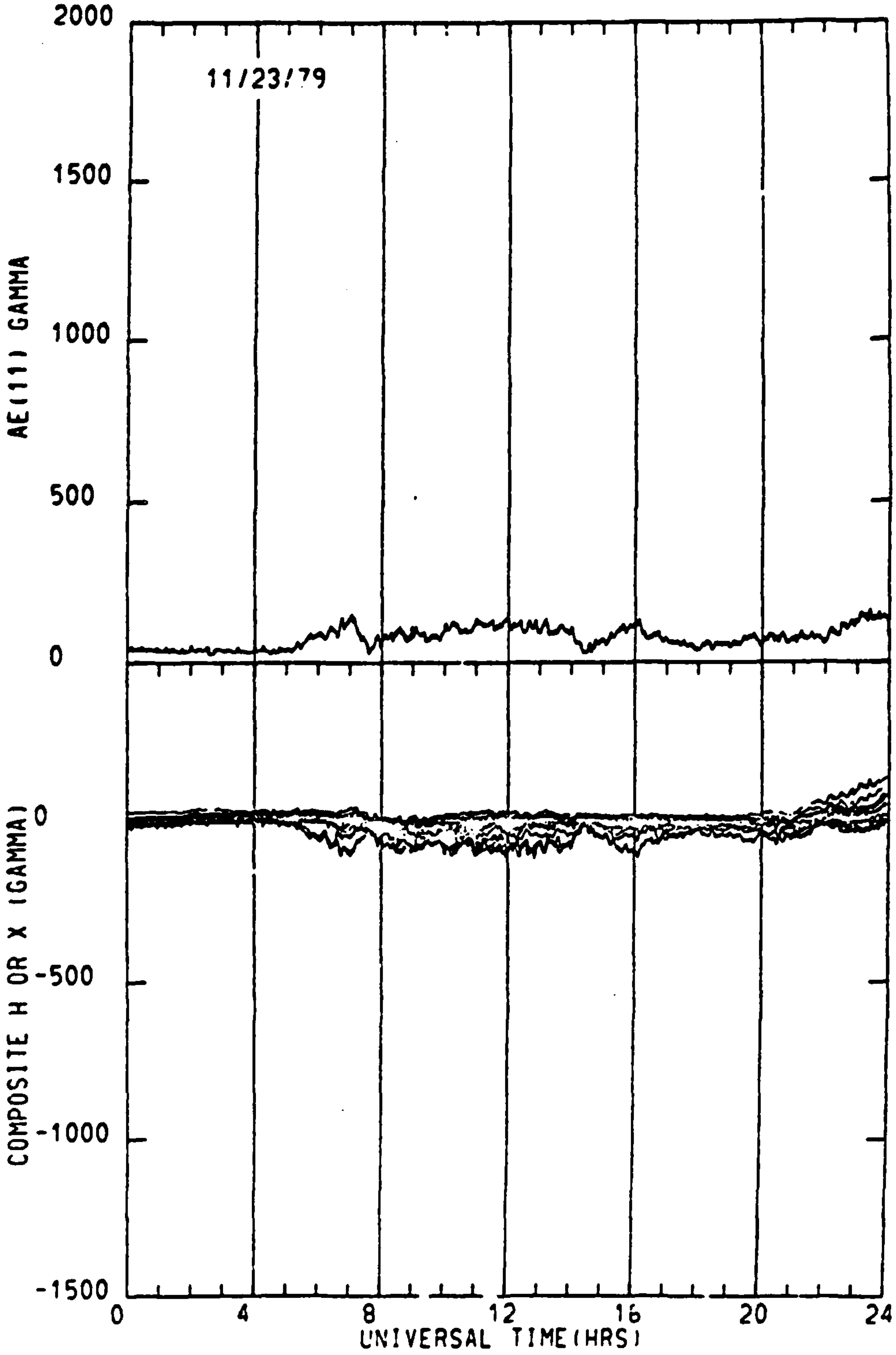

2000
1500
1000
500
0
11/18/79
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

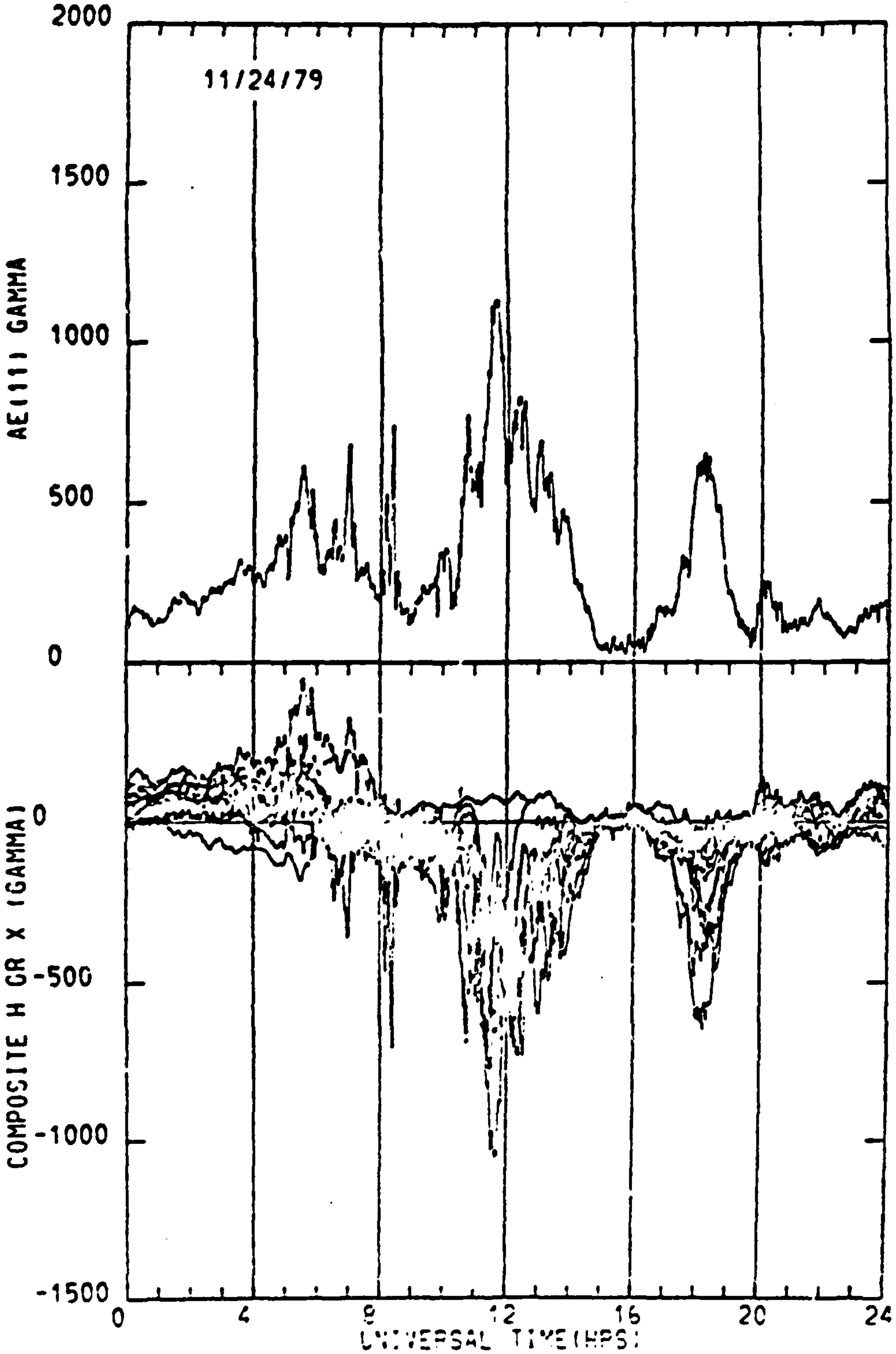

11/19/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

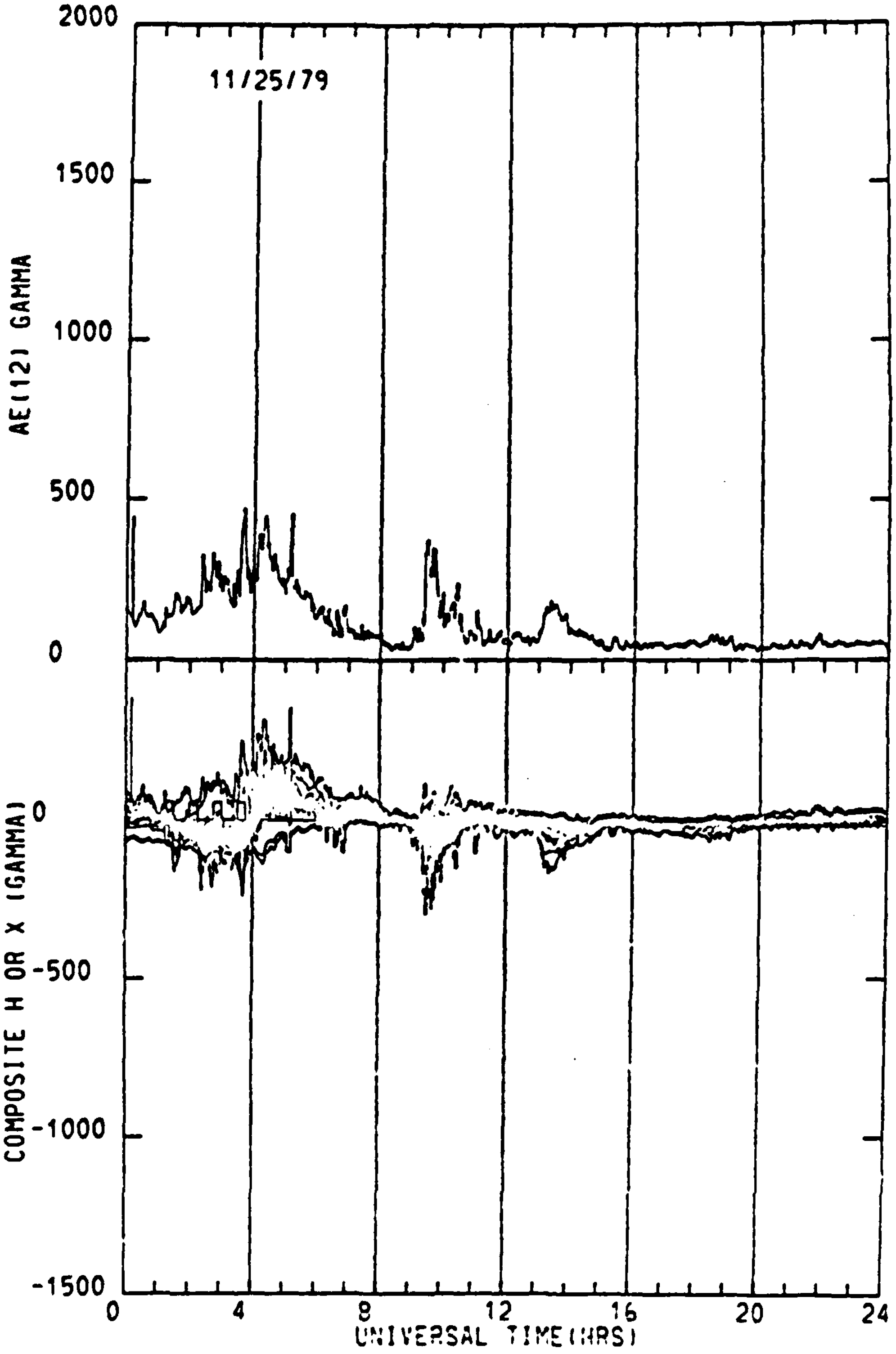

2000
1500
1000
500
0
11/20/79
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


2000
1500
1000
500
0
-500
-1000
-1500
11/21/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

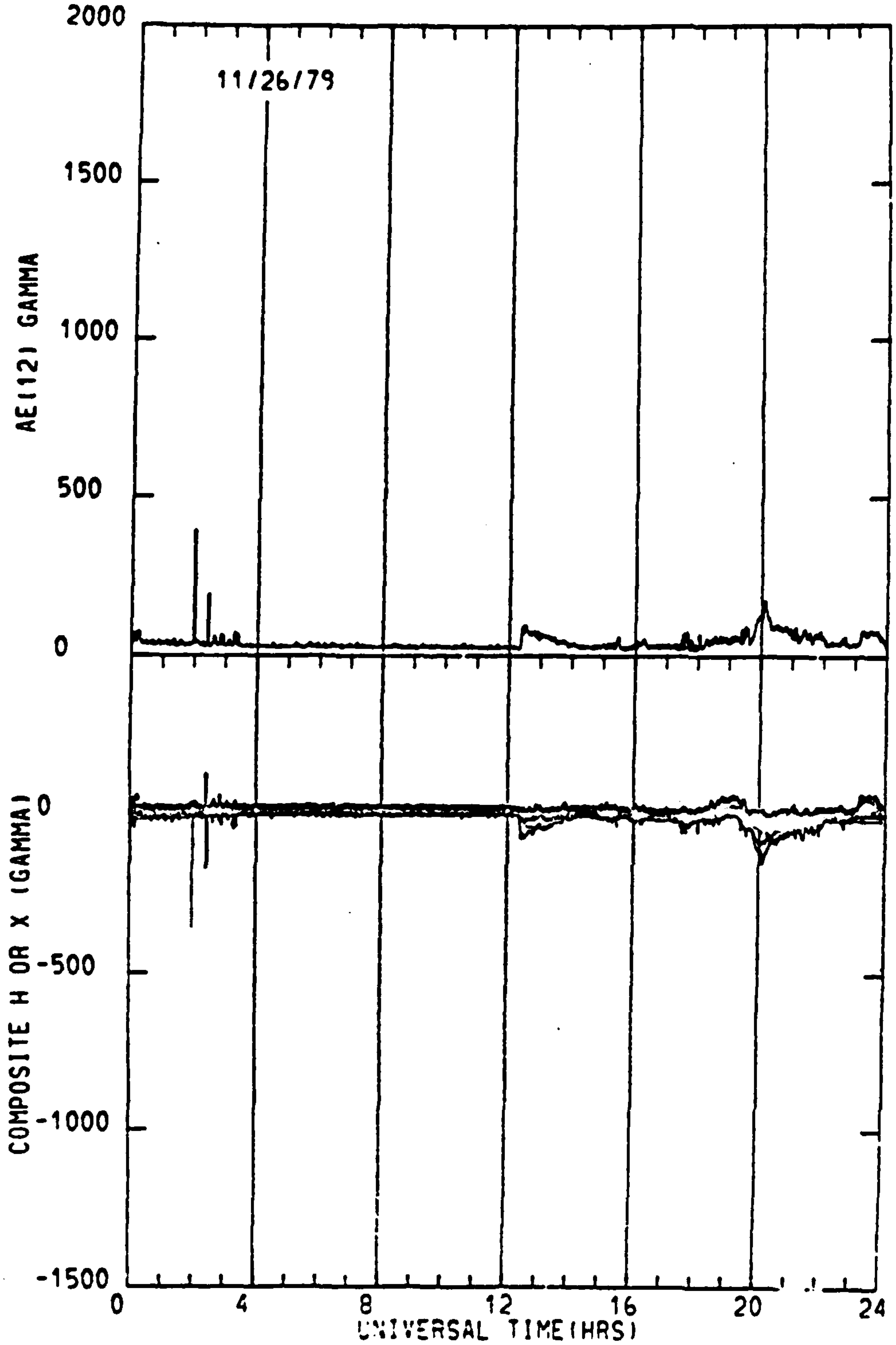

11/22/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

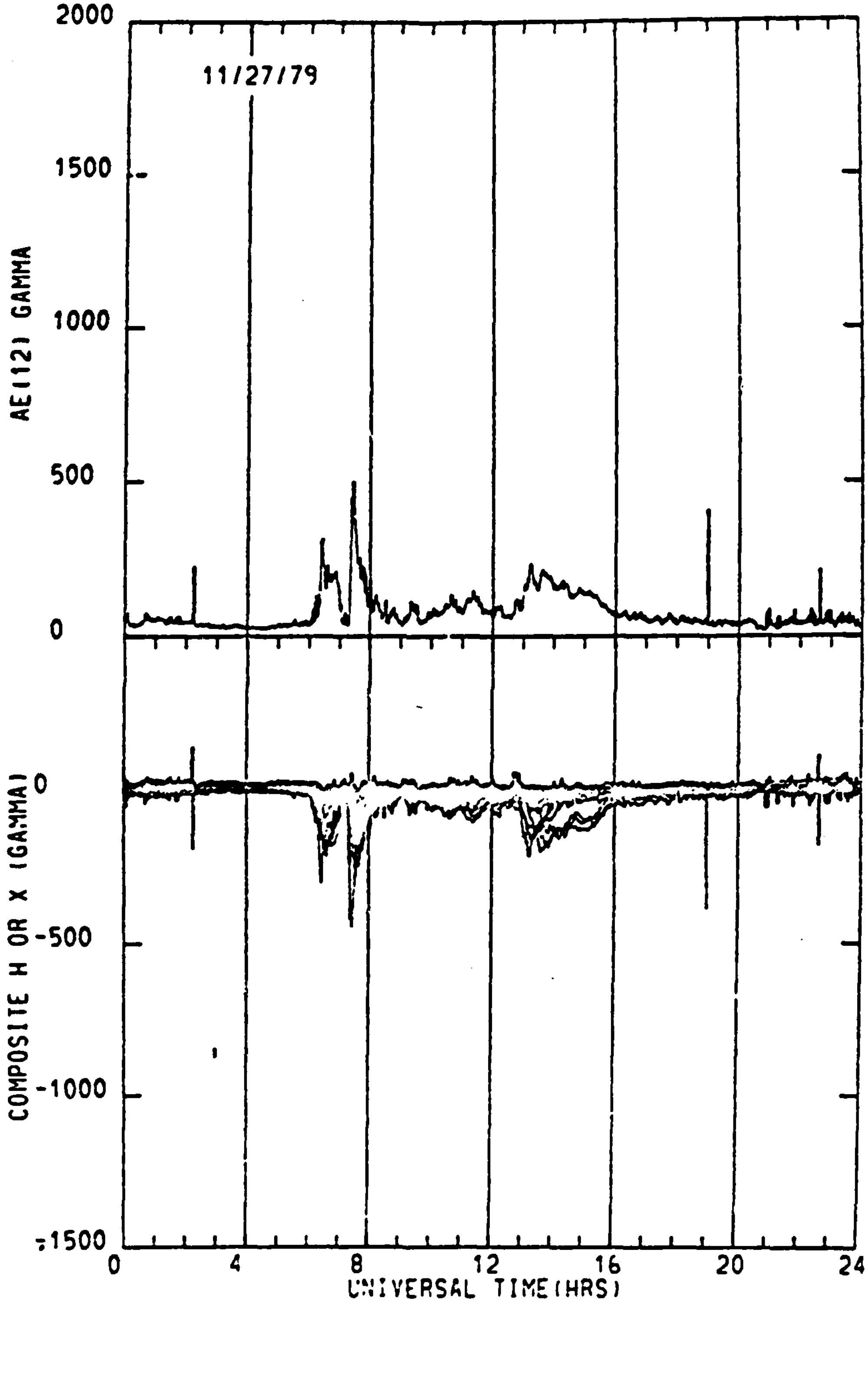

11/23/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

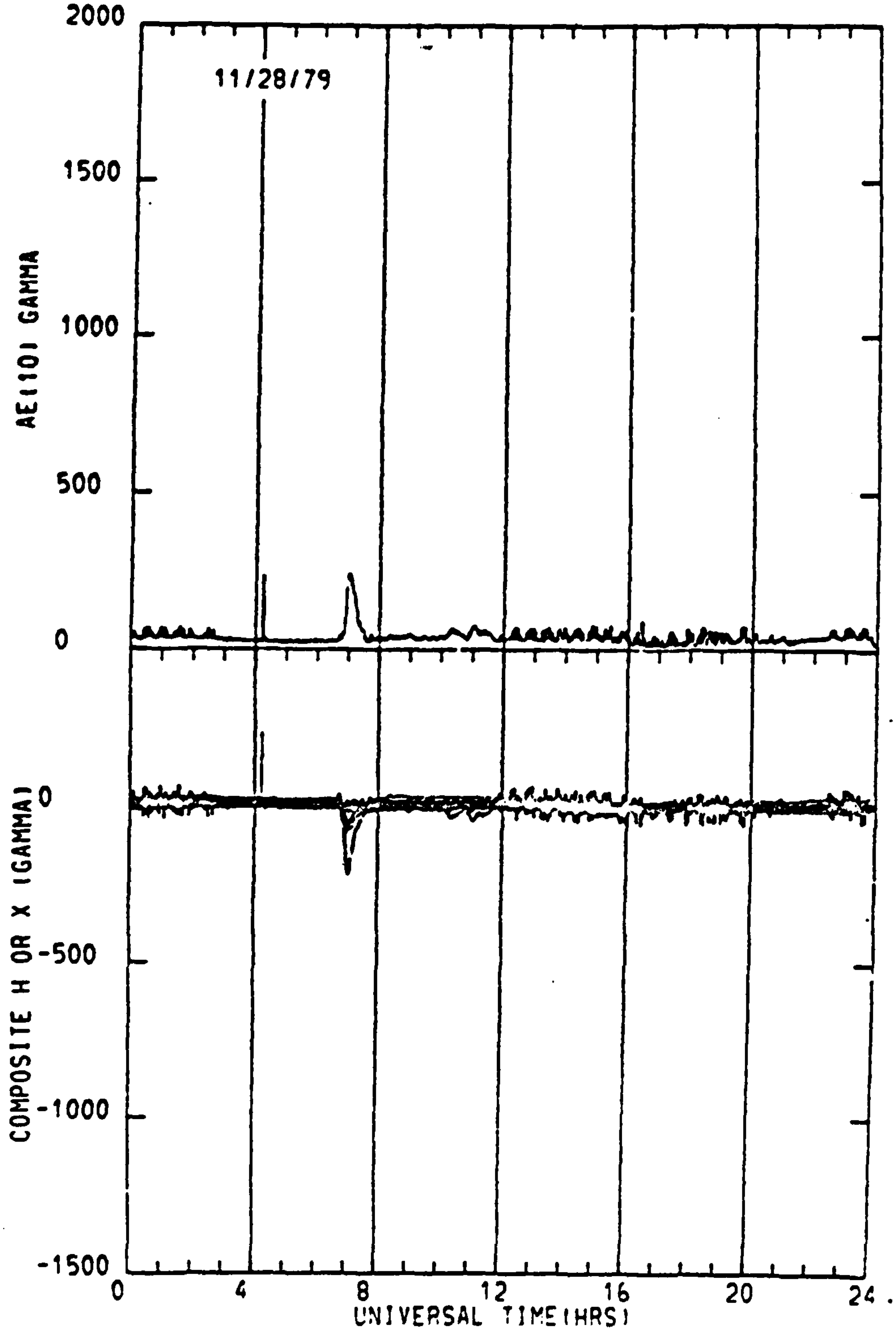

11/24/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H GR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

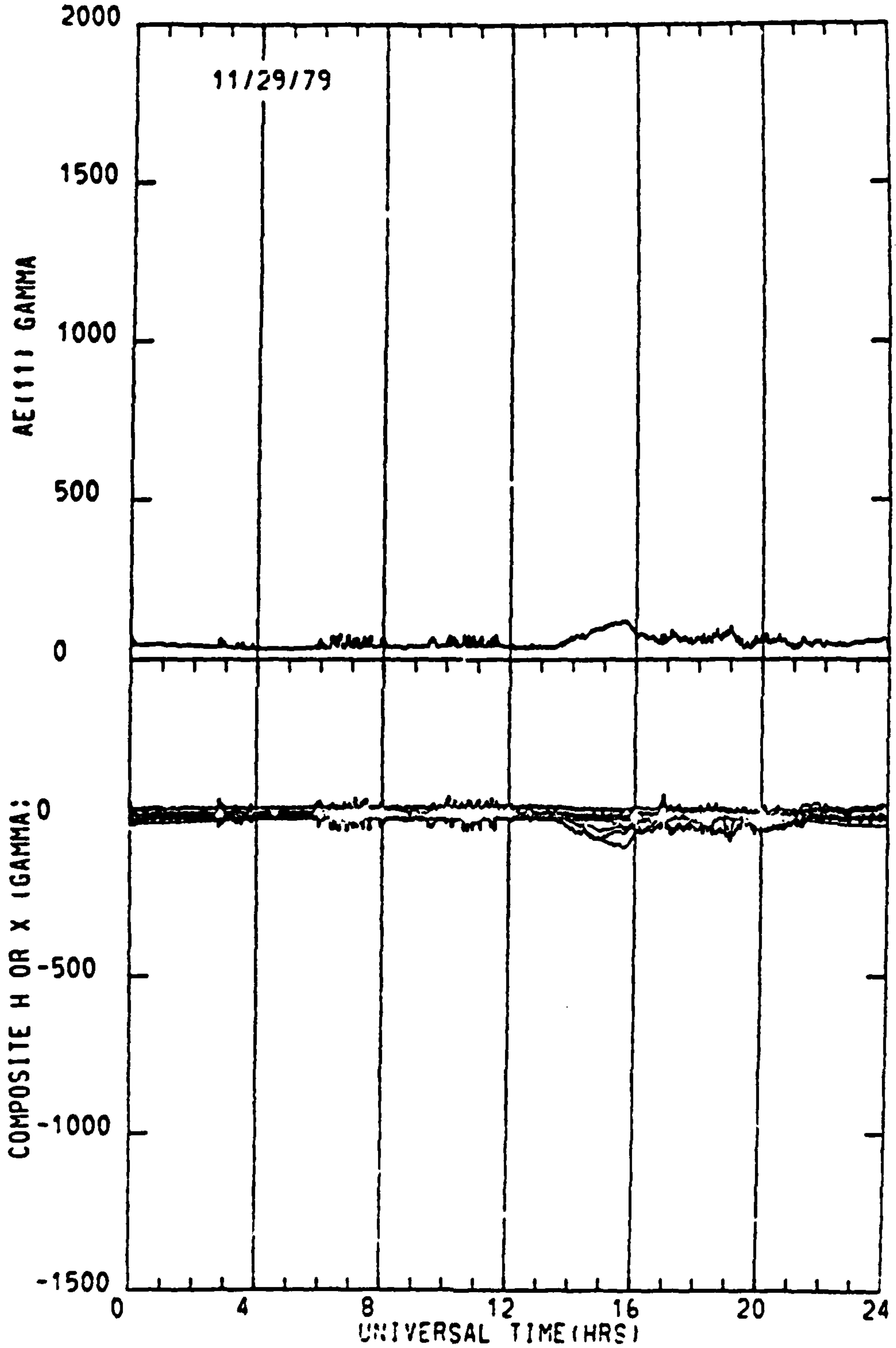

11/25/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

2000

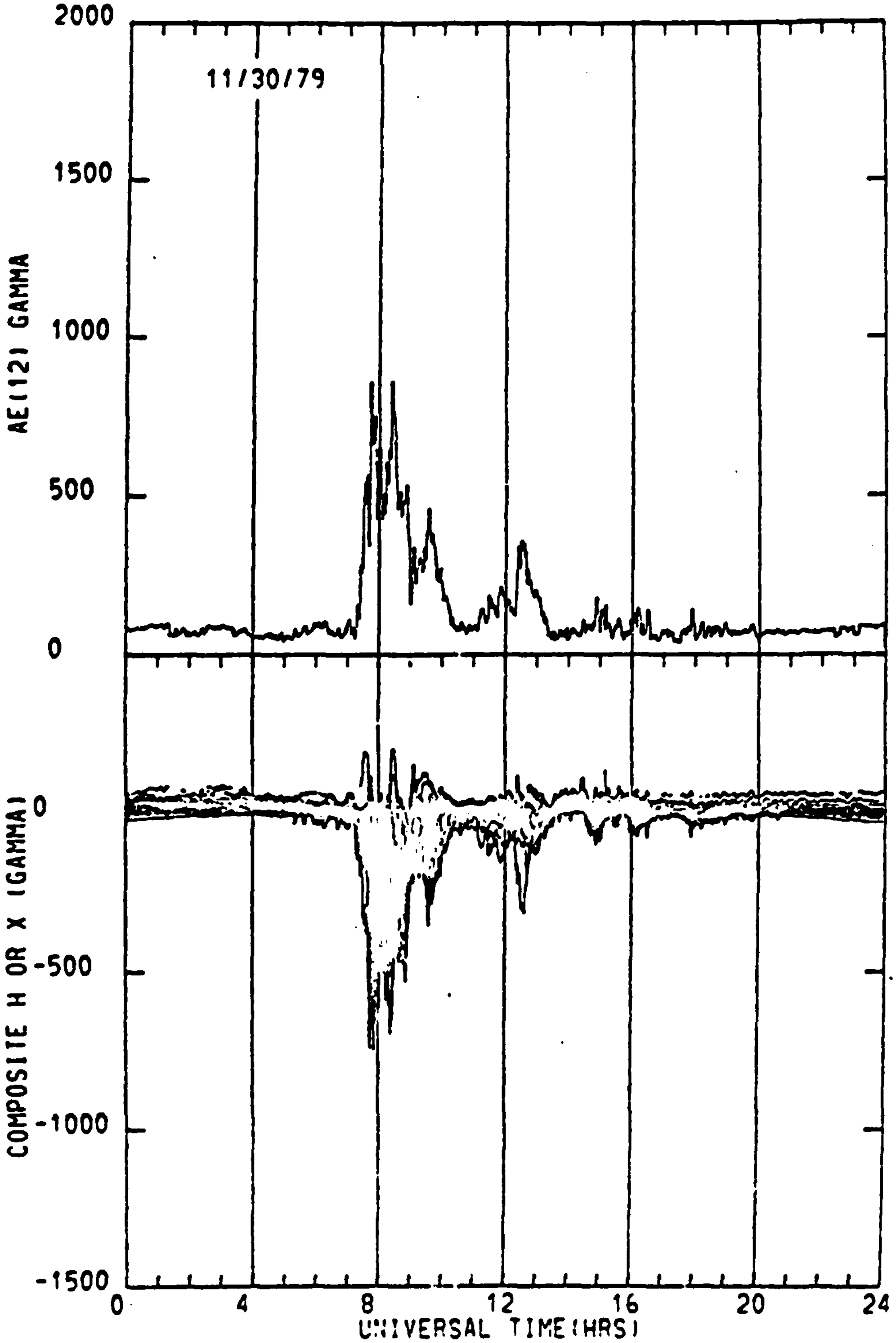

2000
1500
1000
500
0
AE(12) GAMMA
11/26/79
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


11/27/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

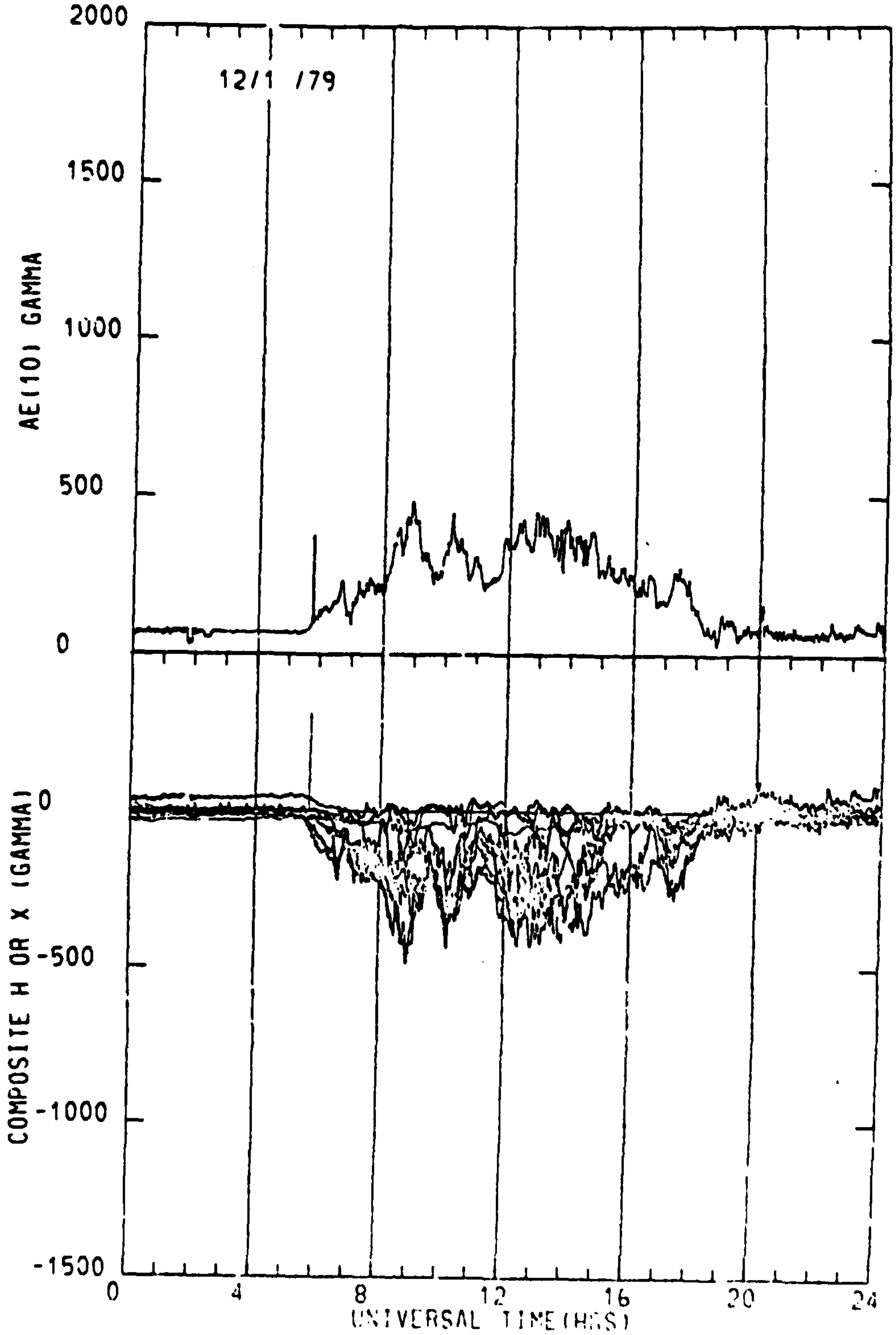

11/28/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



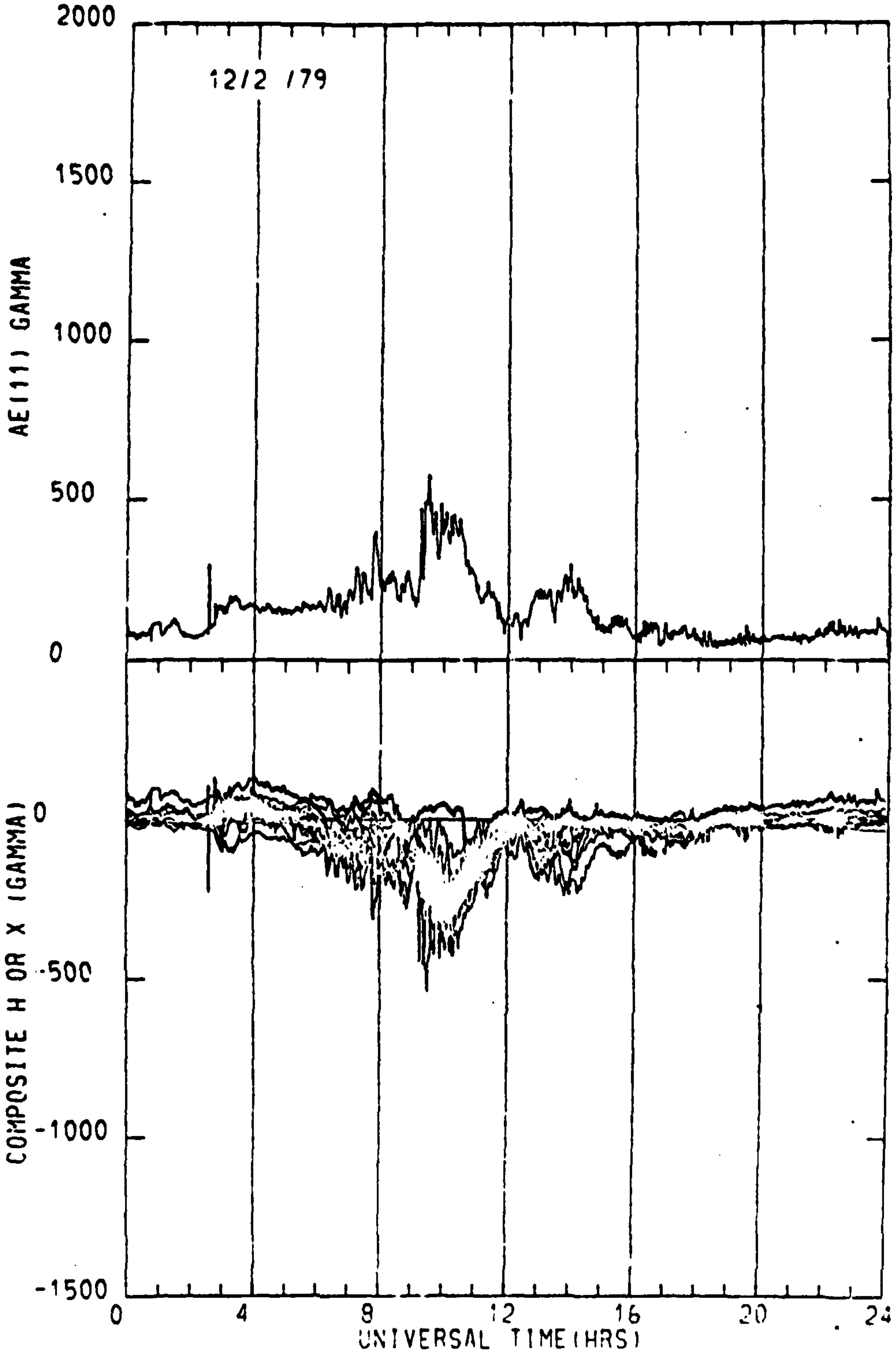
11/29/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

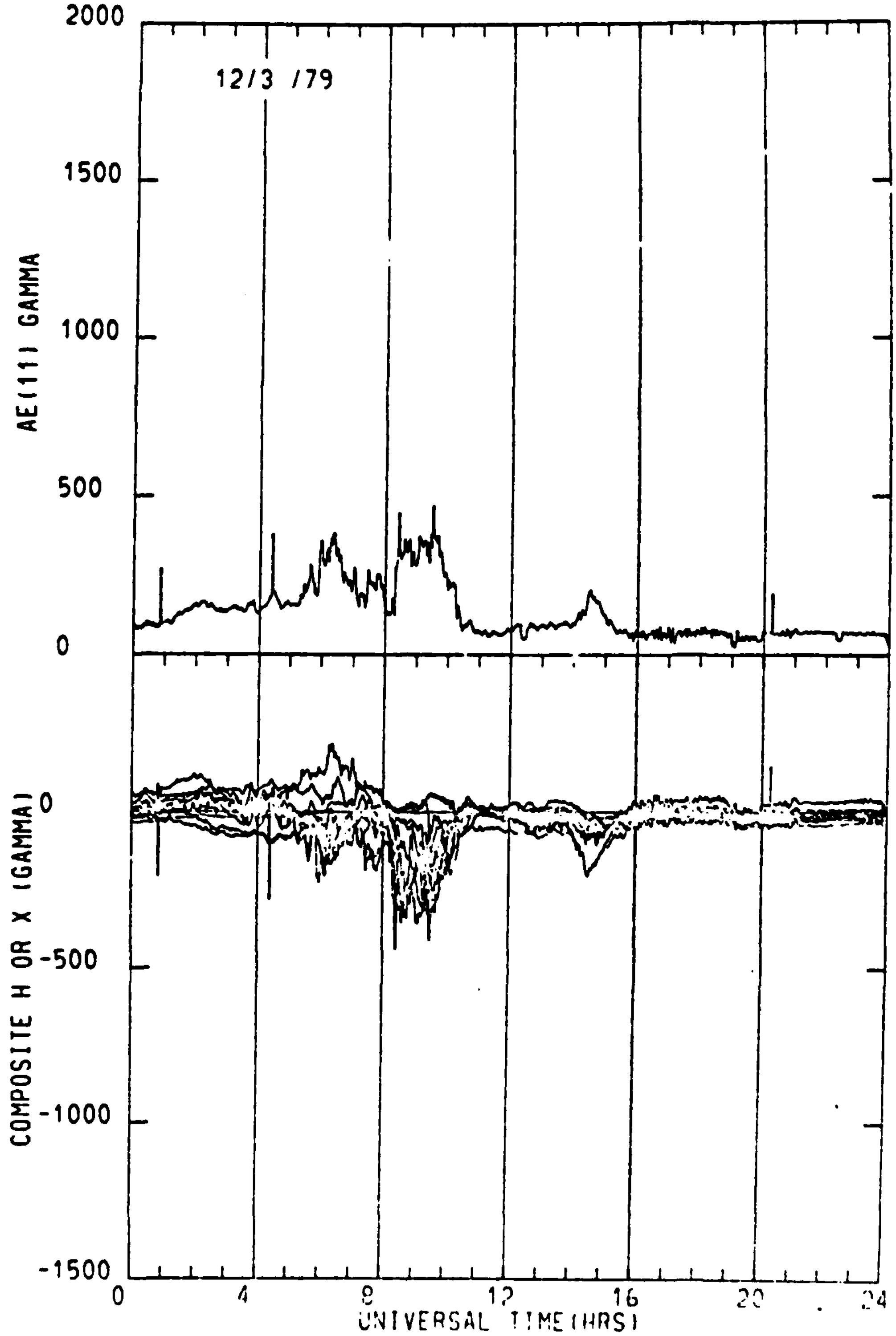


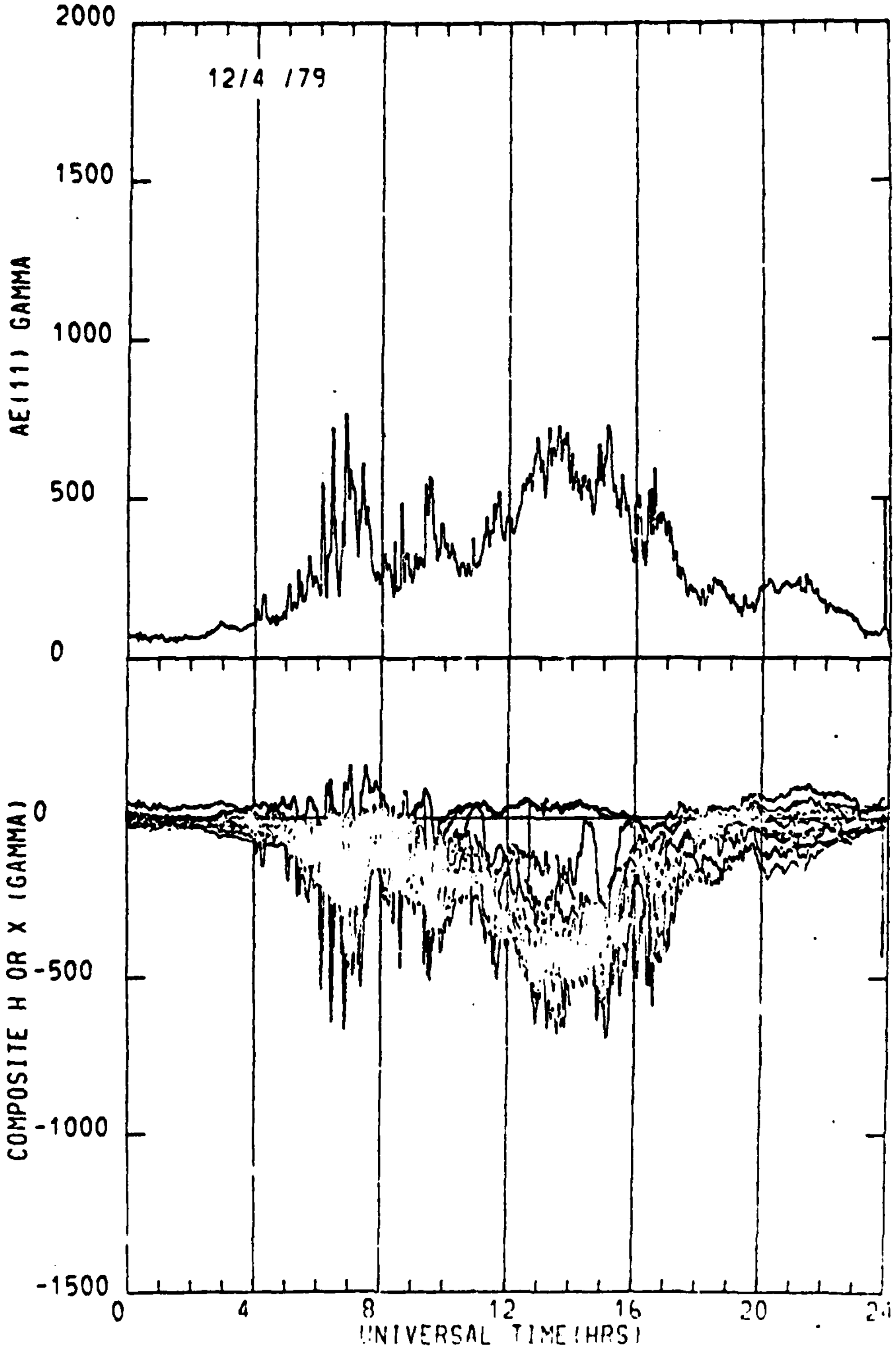
11/30/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

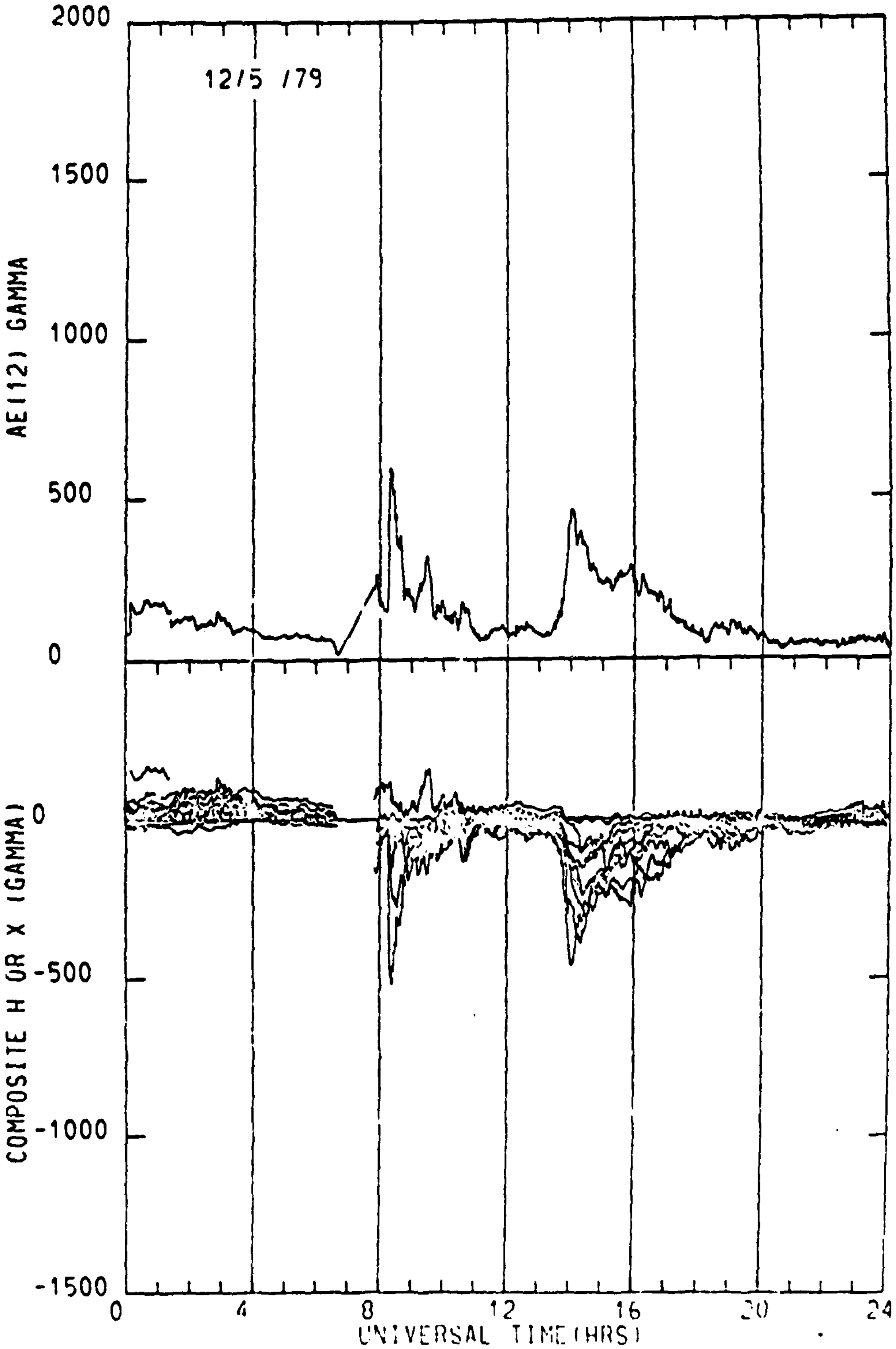


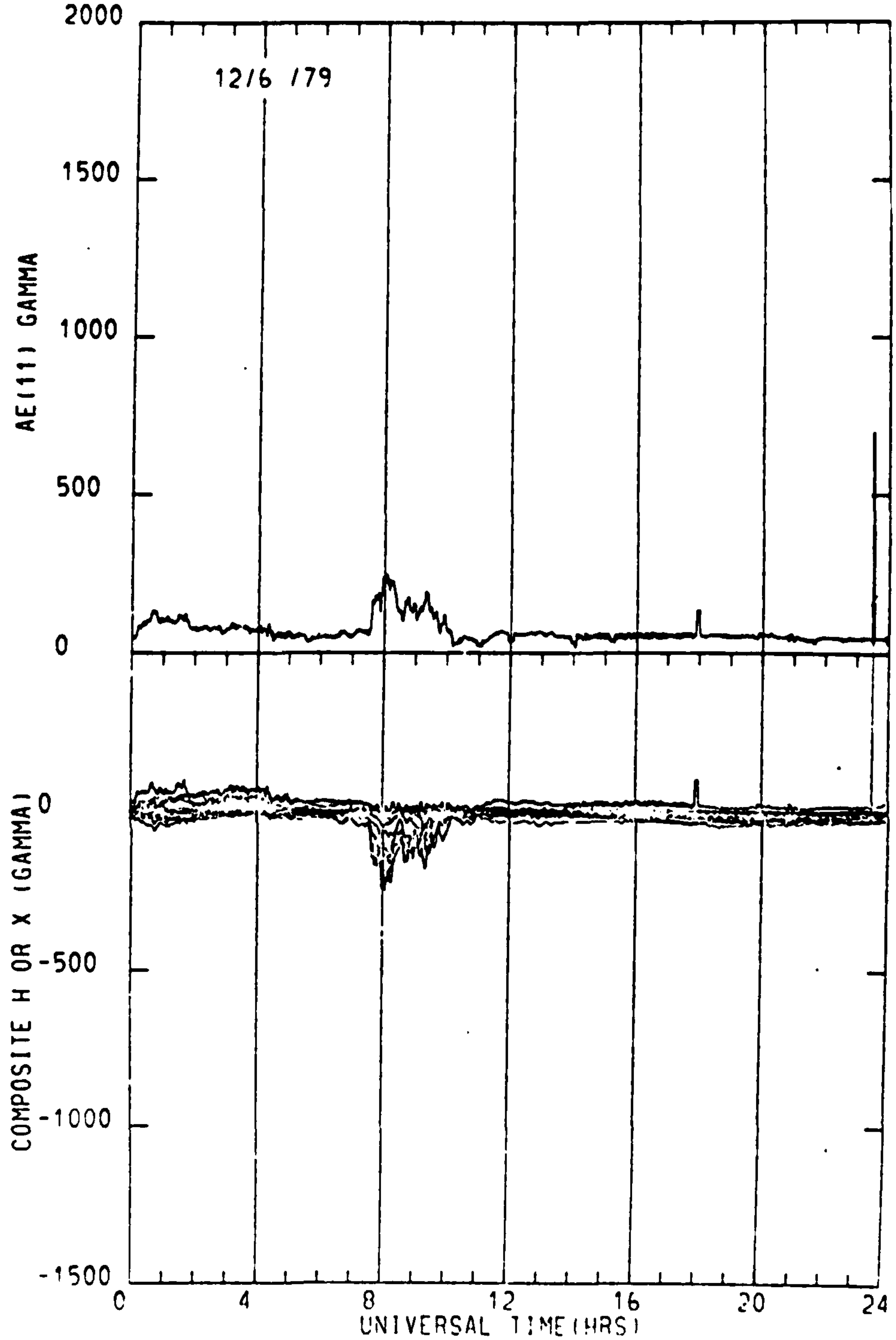
12/1 /79
AE(10) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

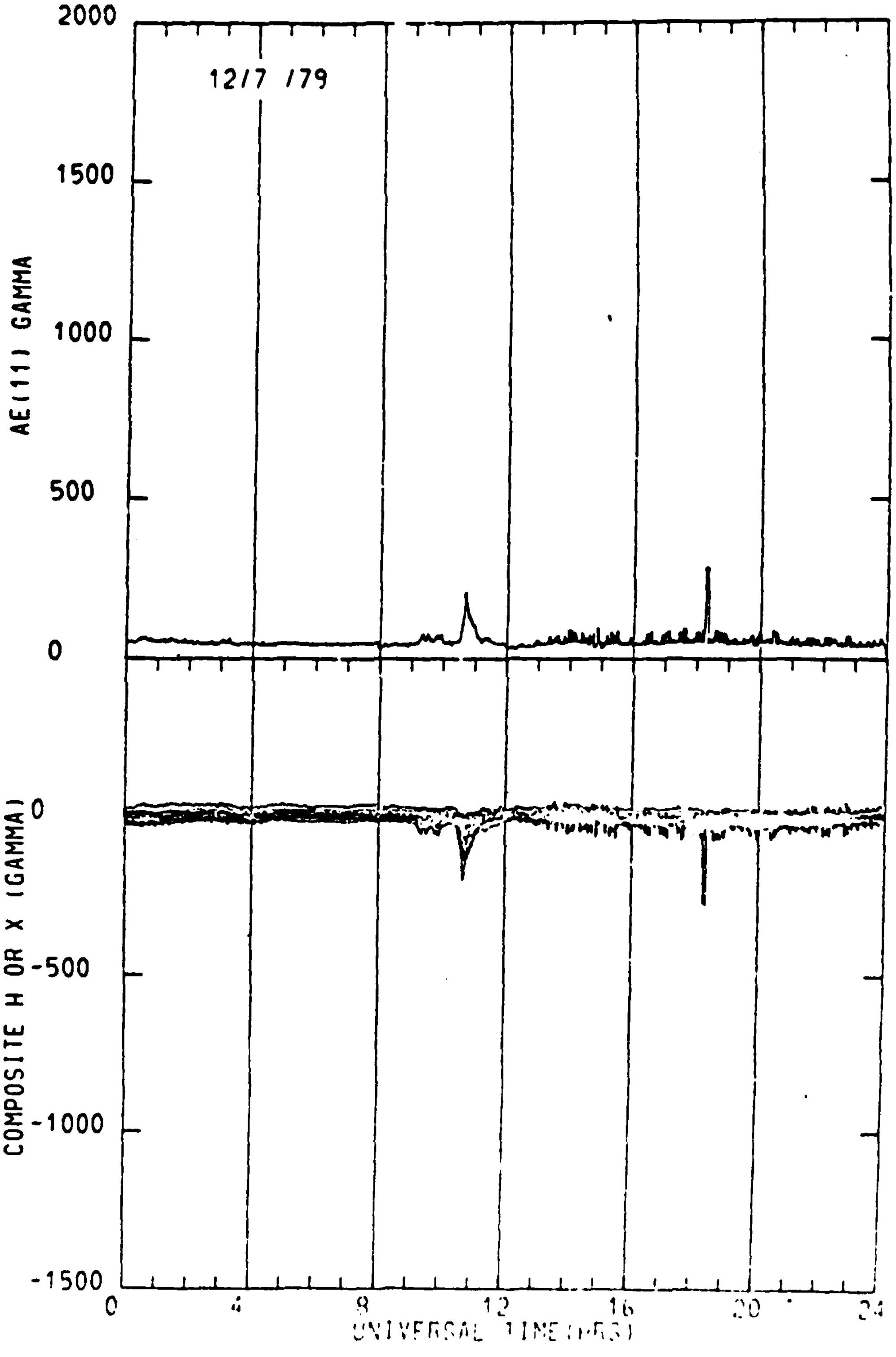

12/2 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/3 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

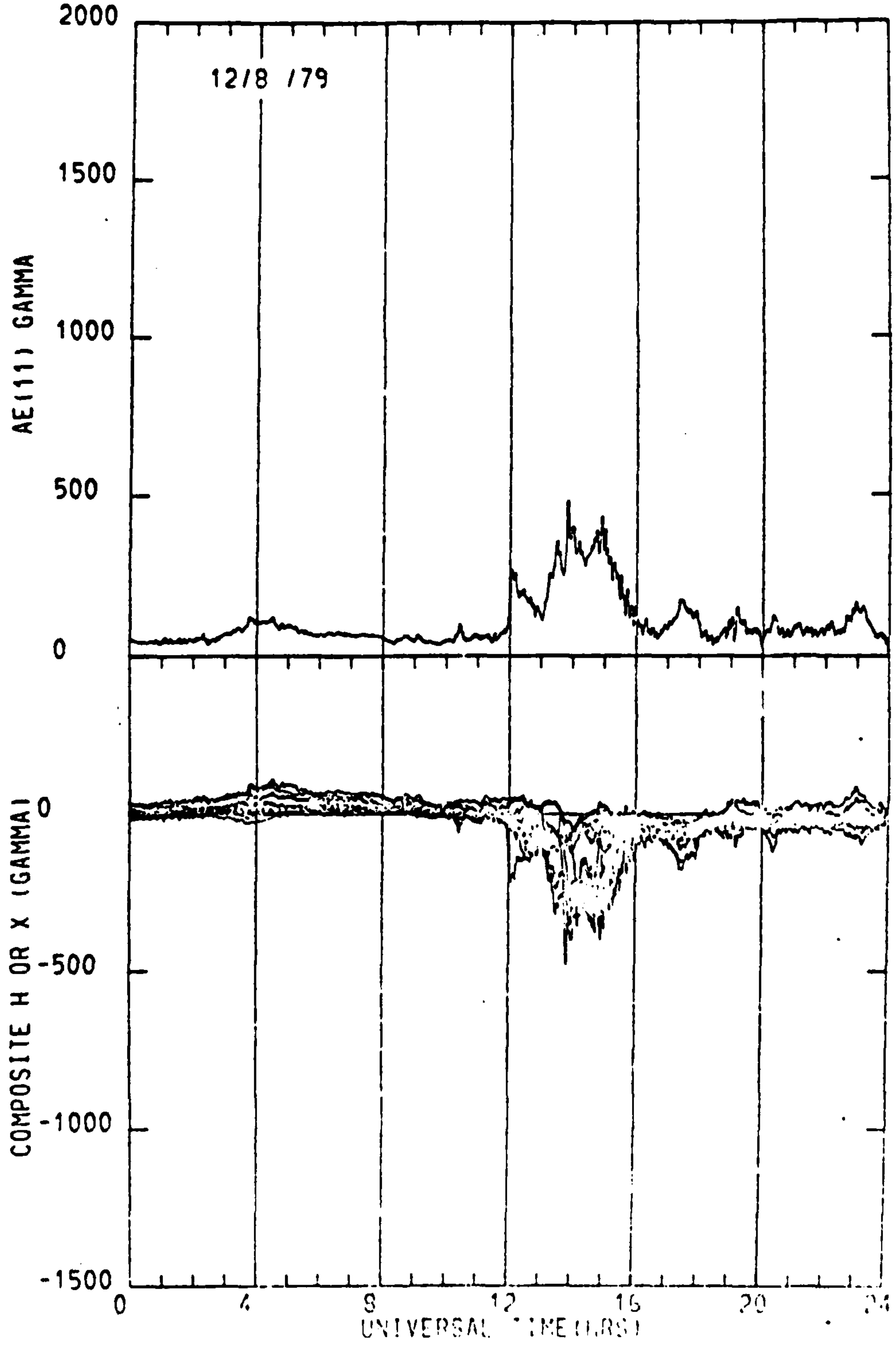

12/4 /79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
UNIVERSAL TIME(HRS)


12/5 /79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

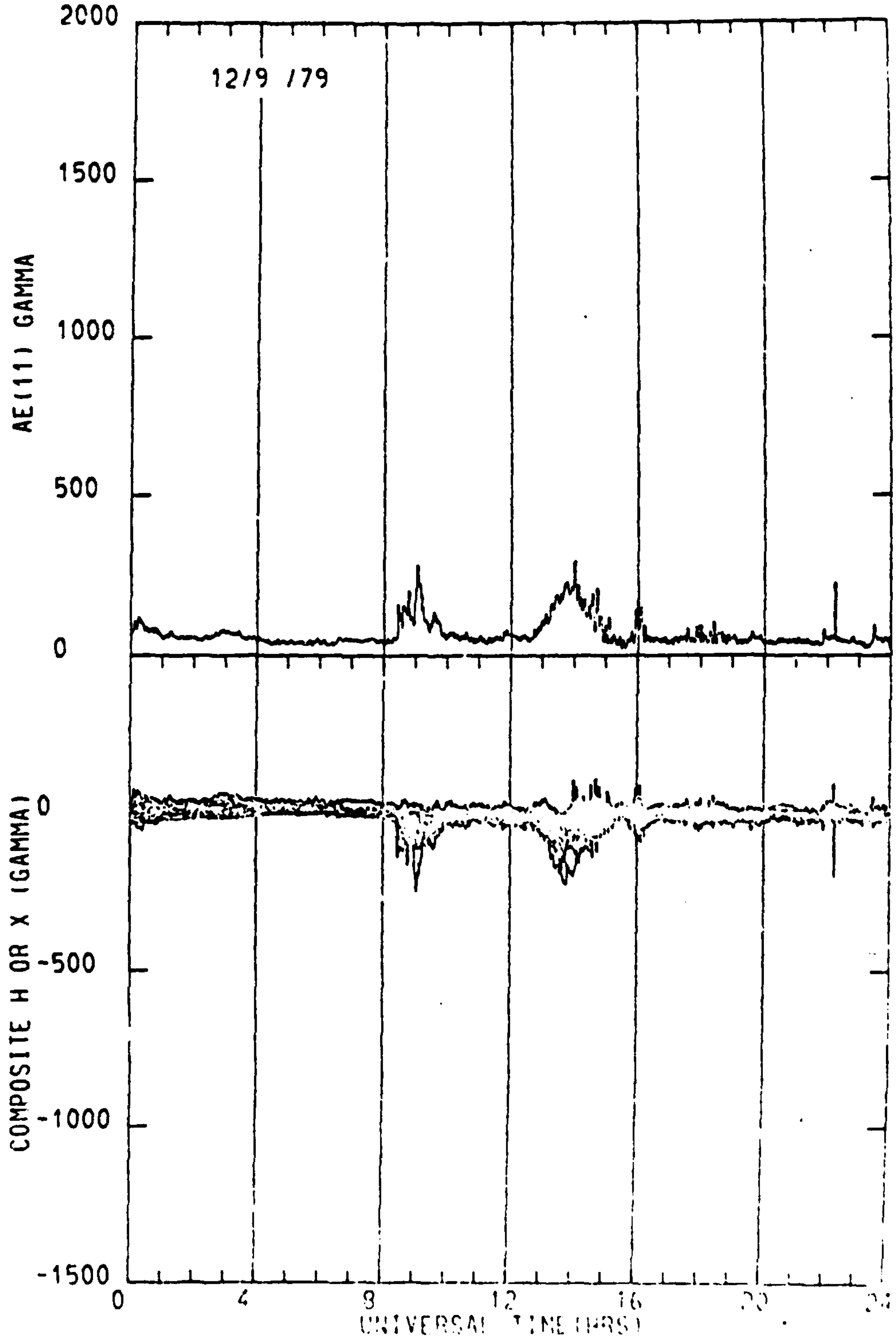

12/6 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



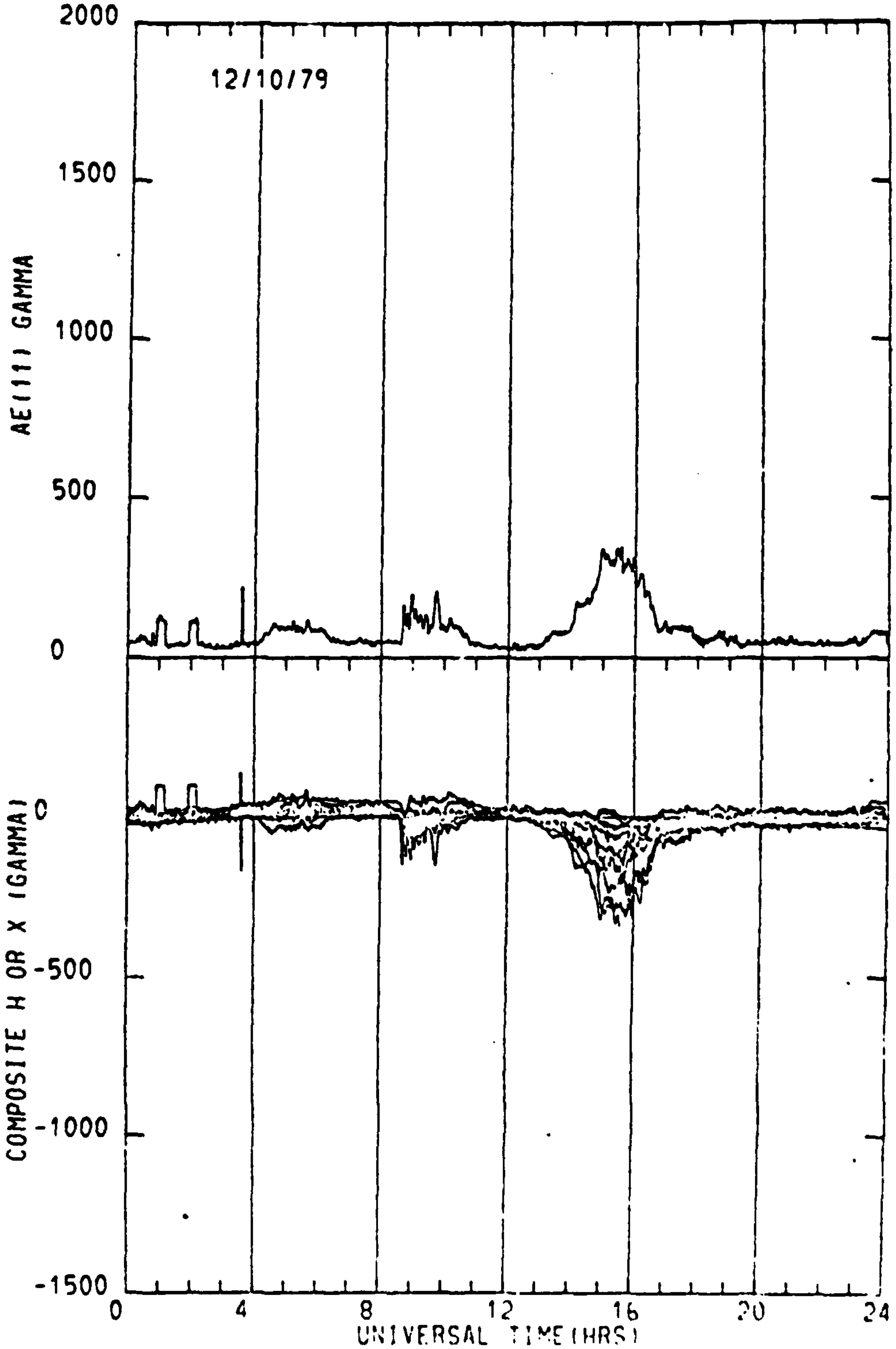
2000
1500
1000
500
0
AE(11) GAMMA
12/7 /79
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

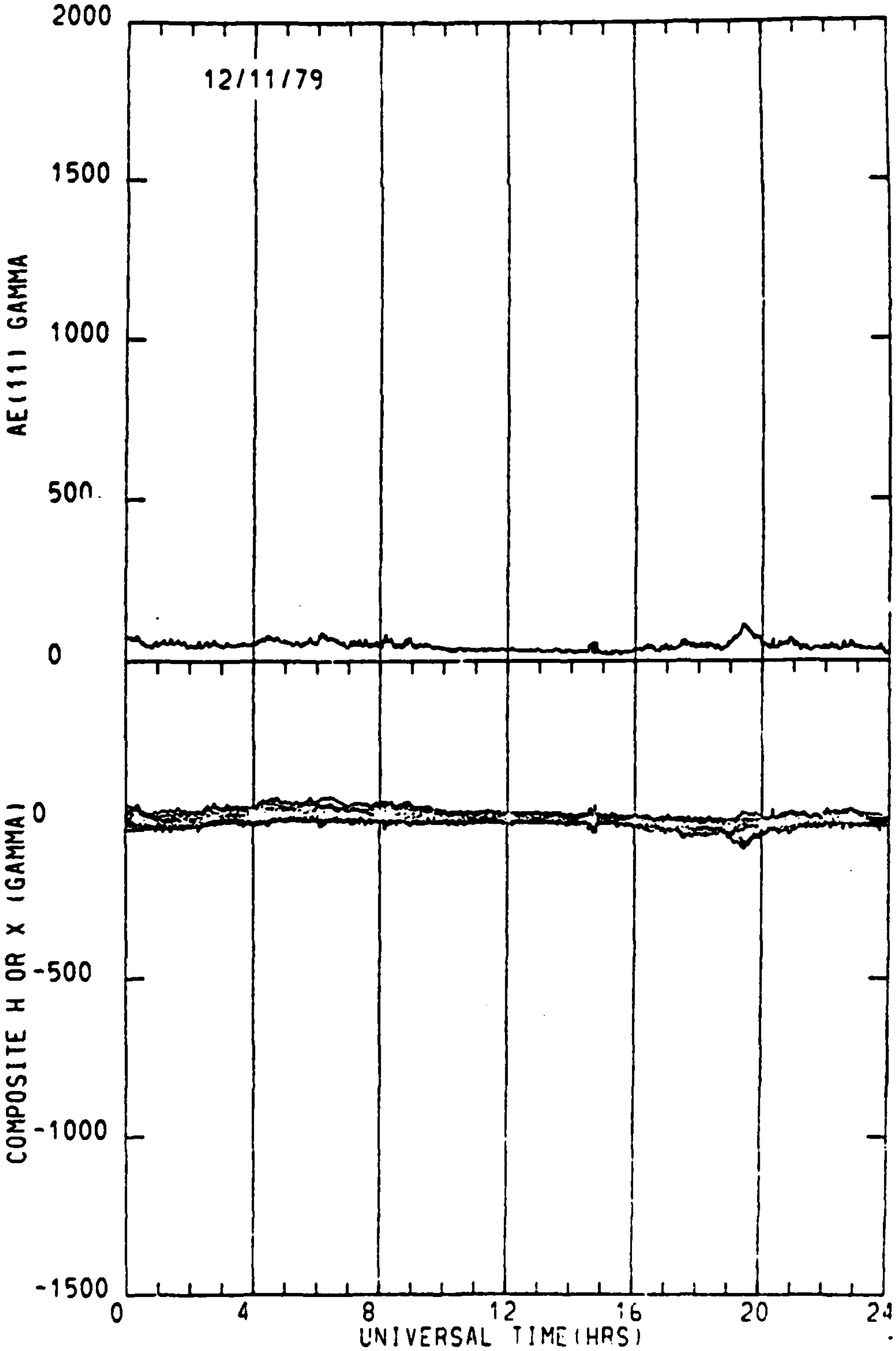


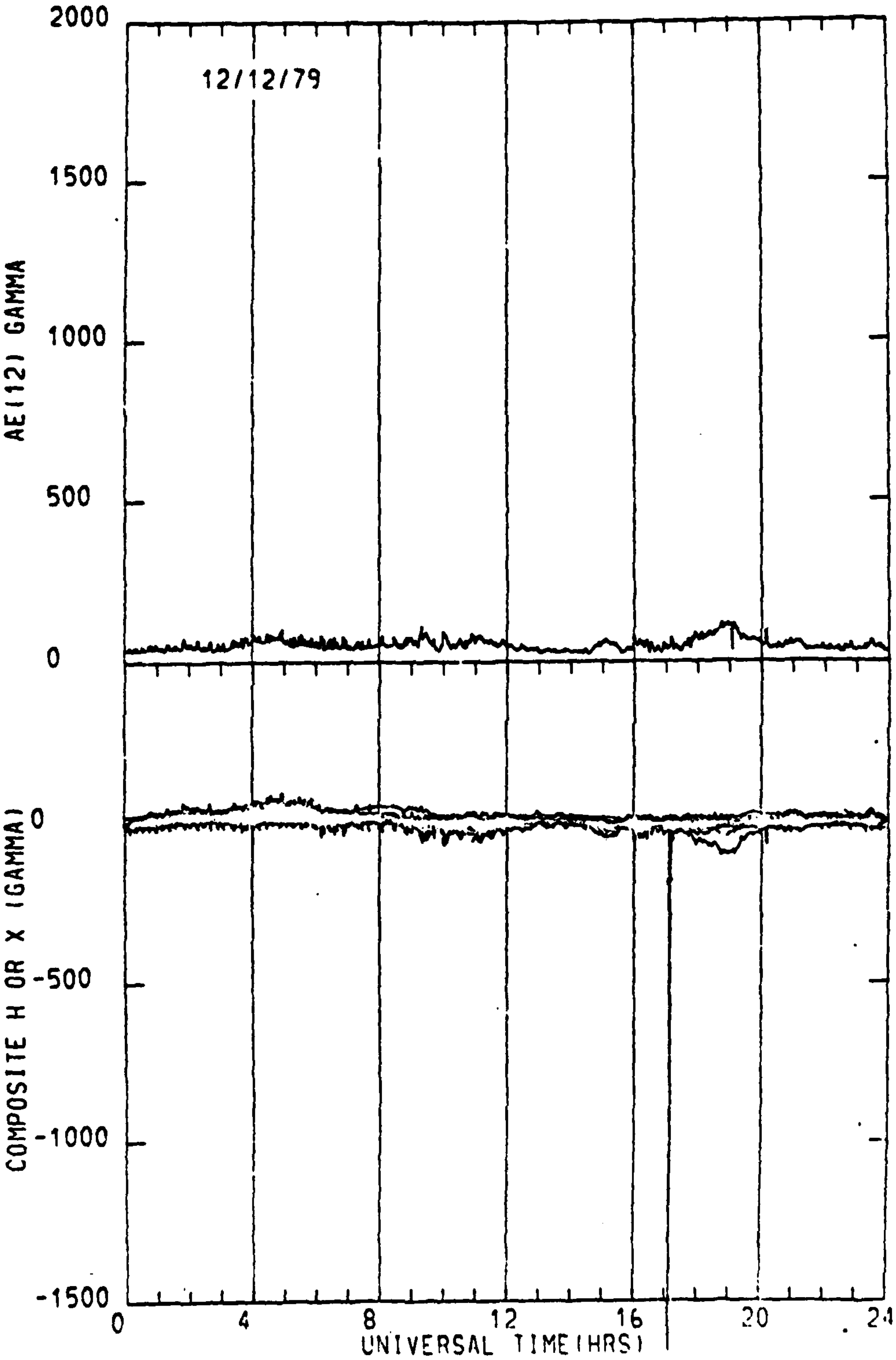
12/8 /79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

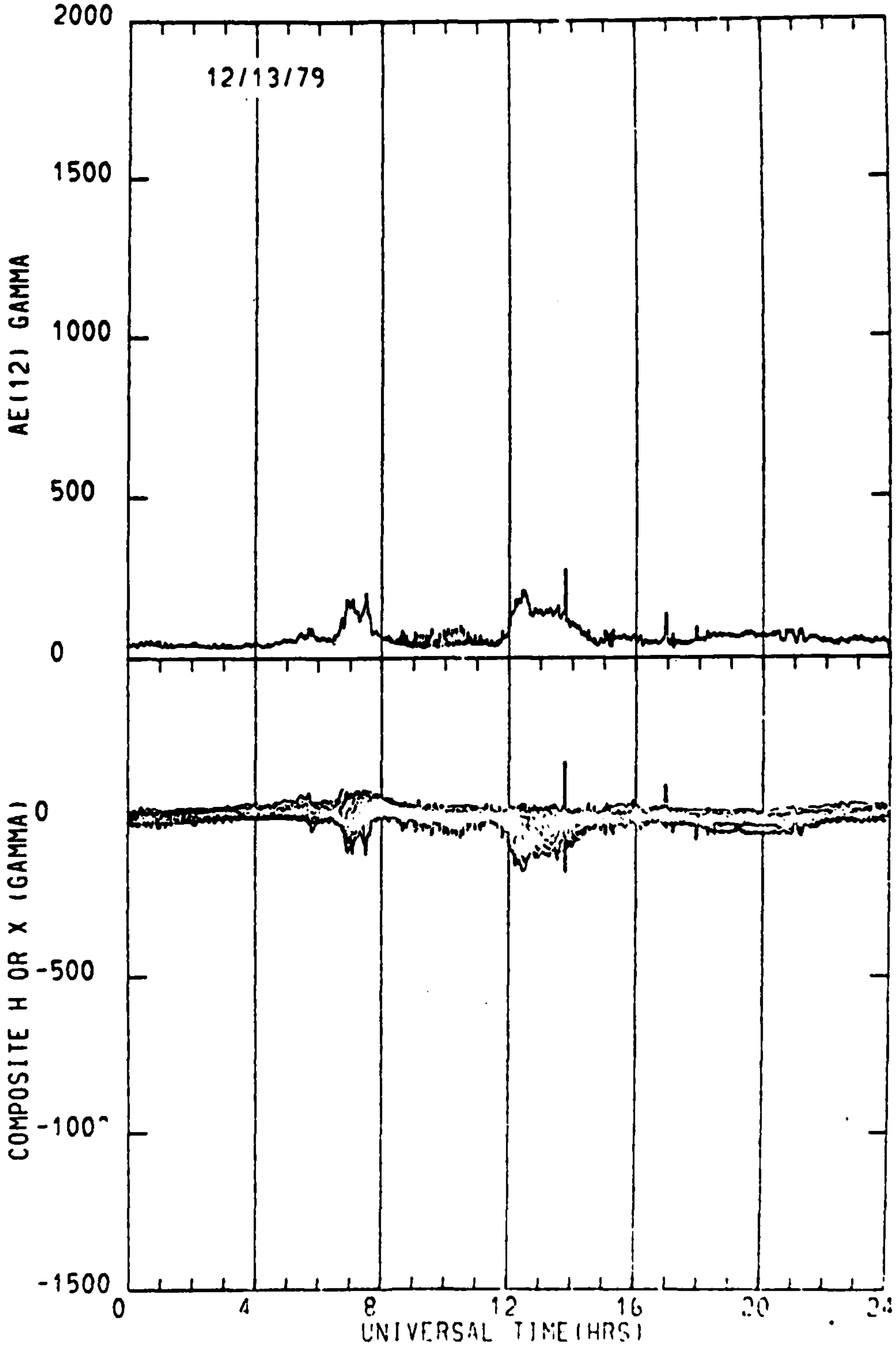


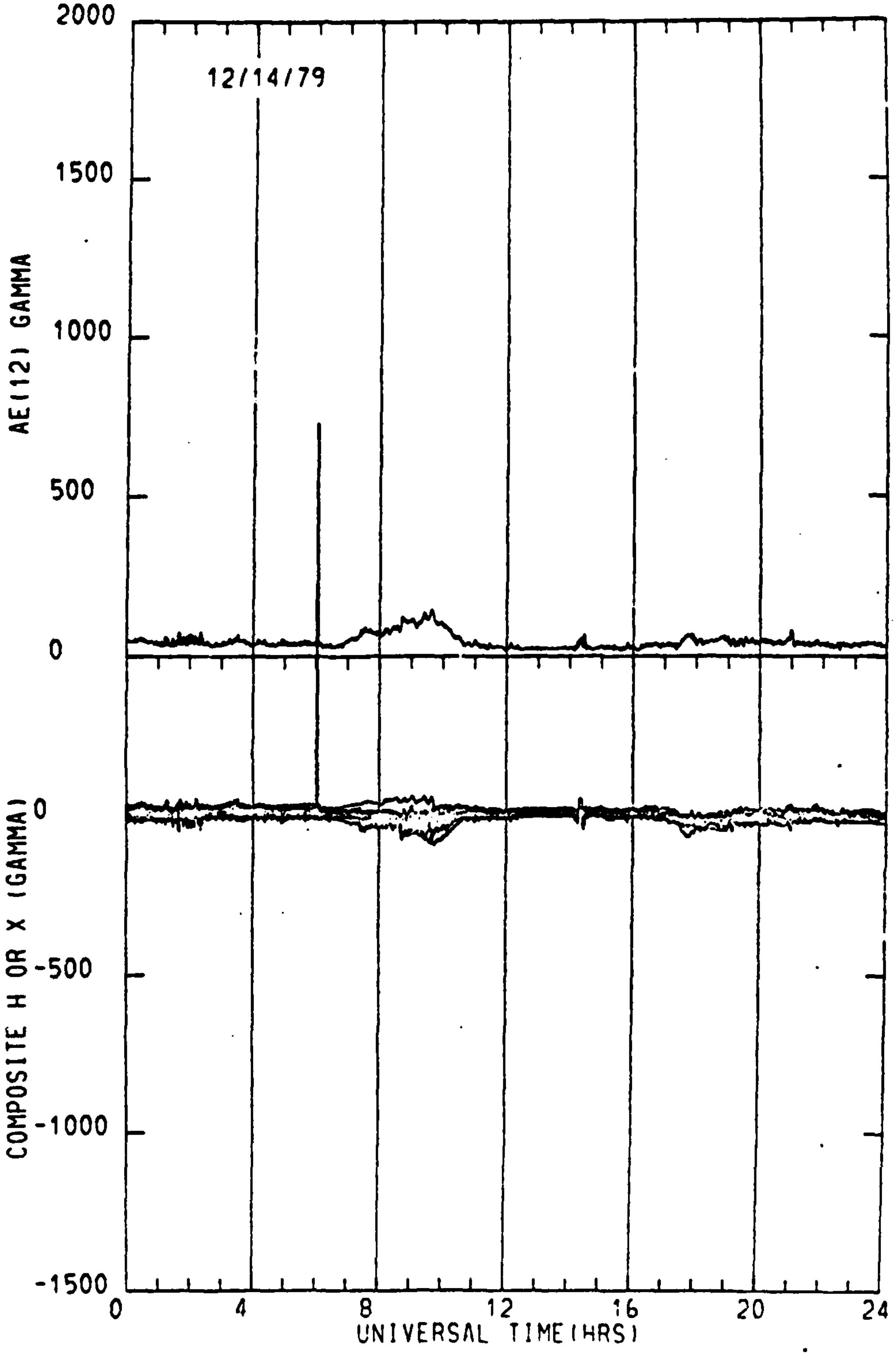
12/9 /79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
UNIVERSAL TIME(HRS)


12/10/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

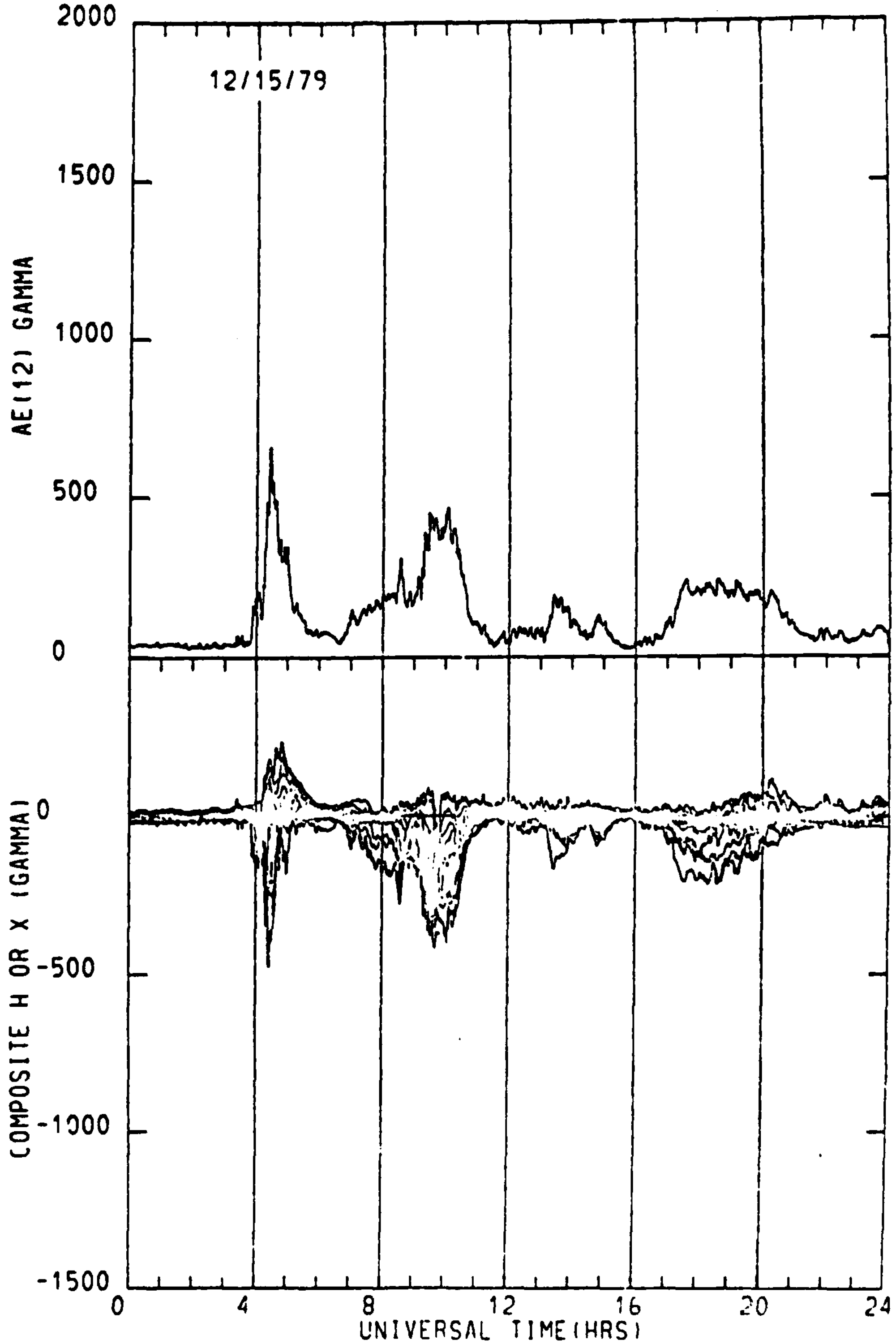

12/11/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

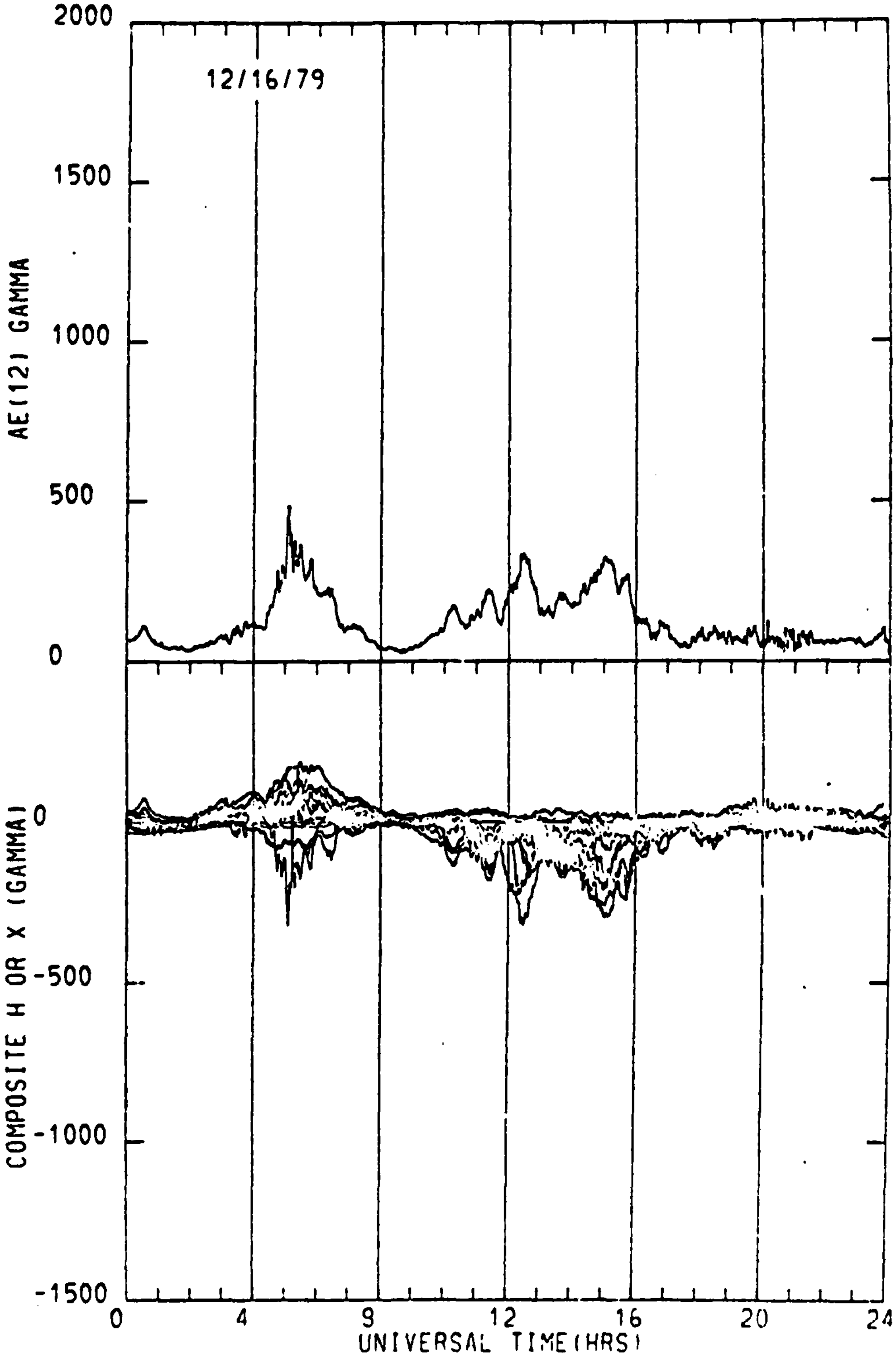

12/12/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

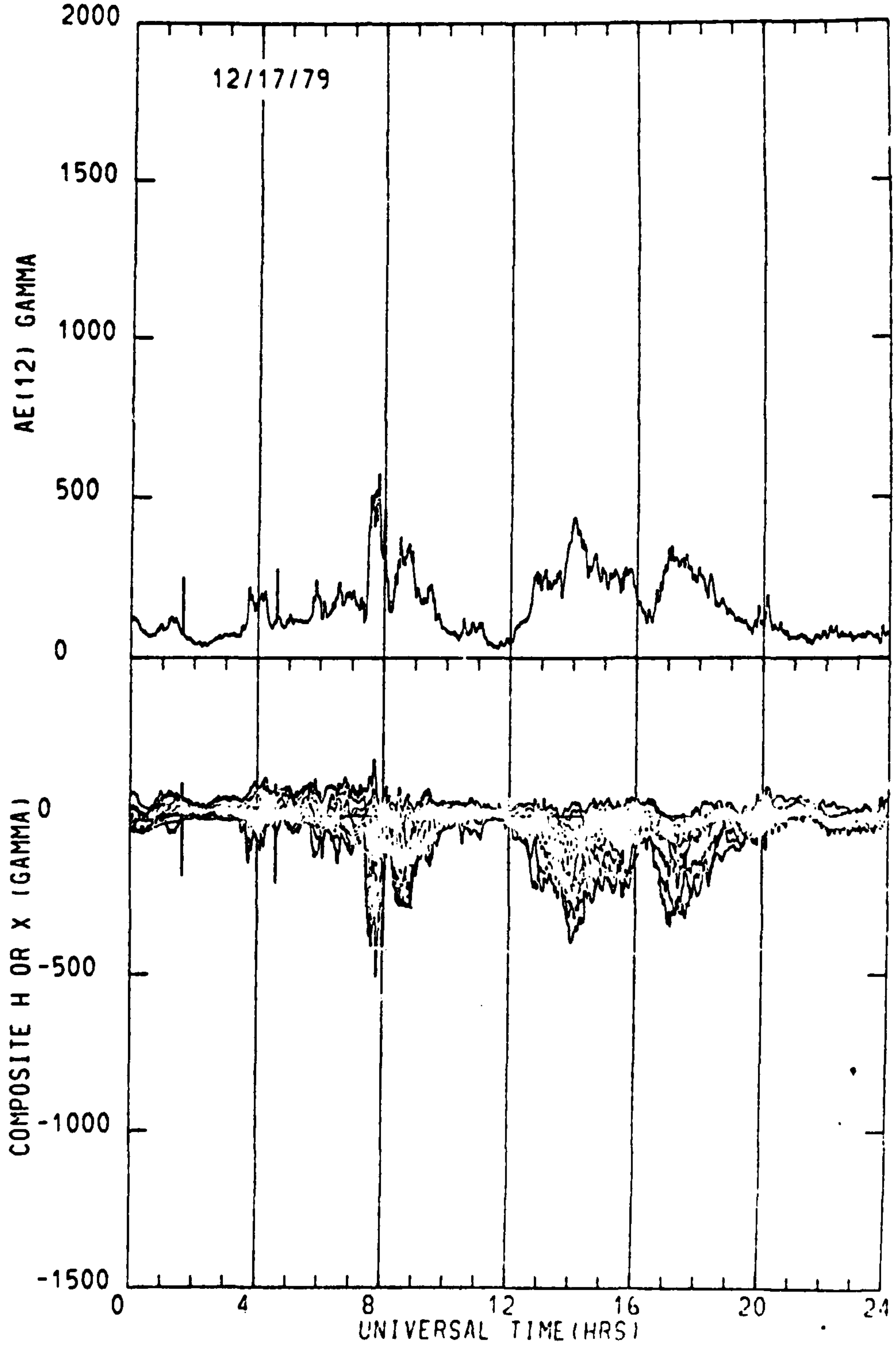

12/13/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-100^
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

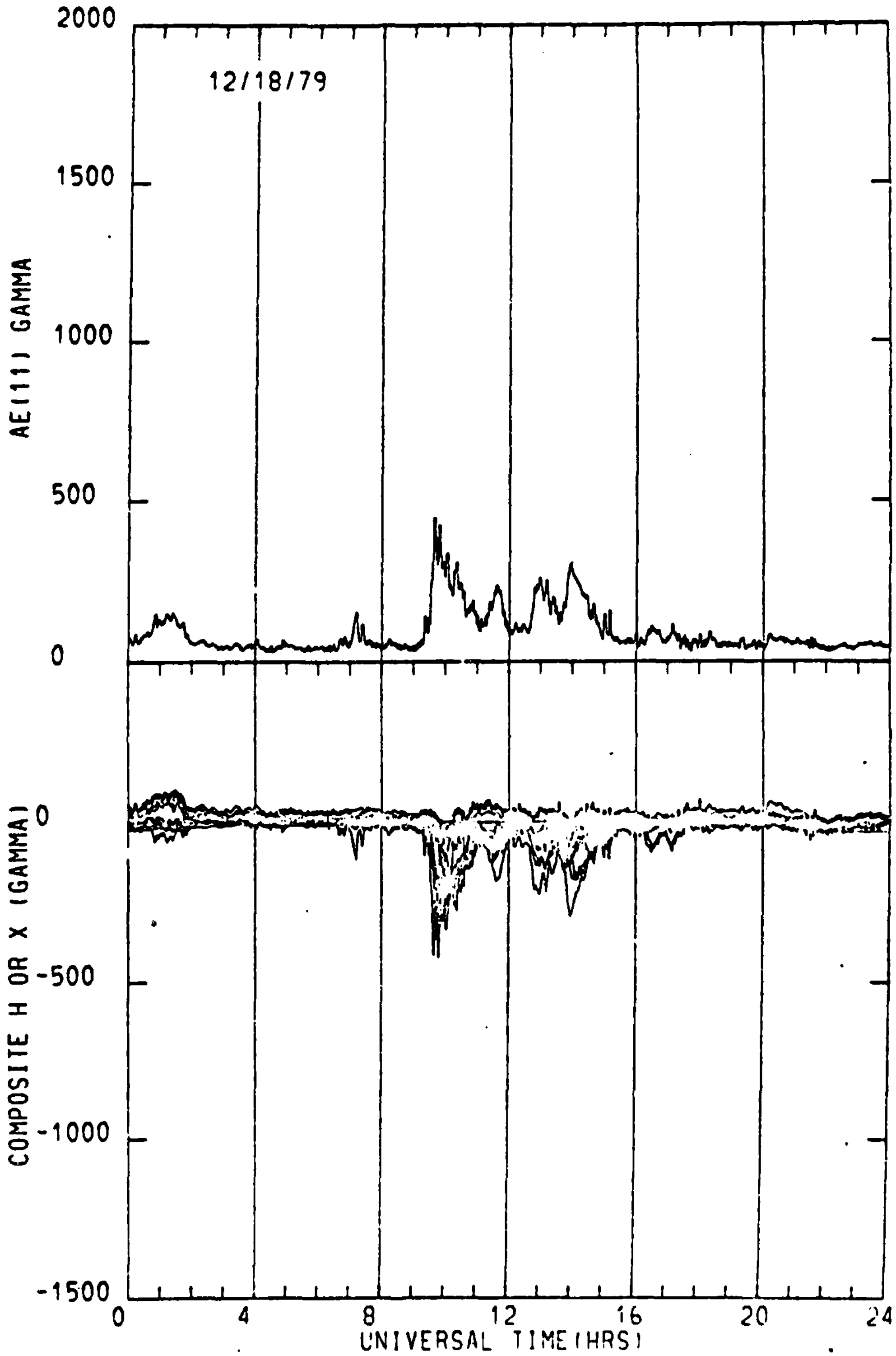


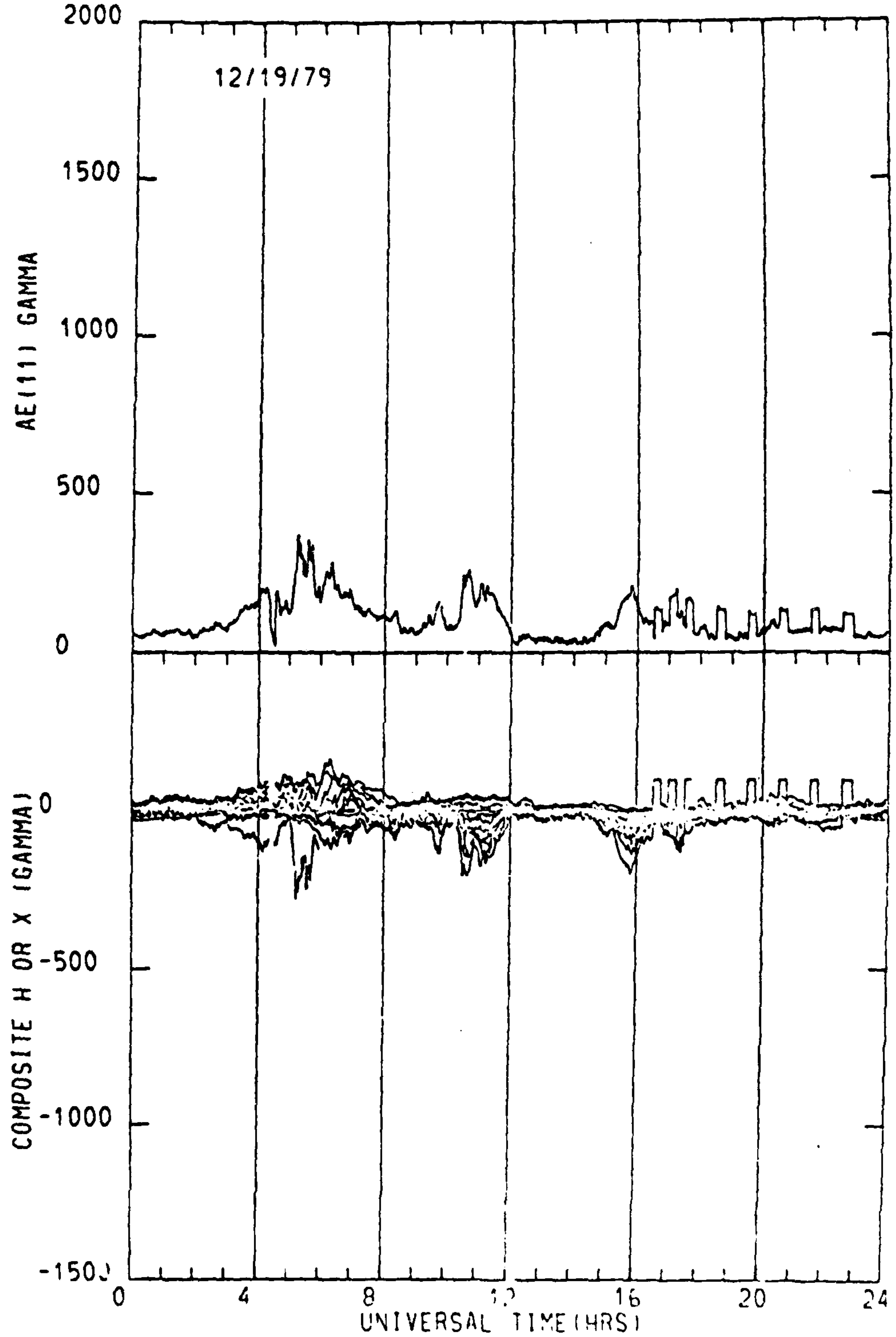
2000
1500
1000
500
0
12/14/79
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/15/79
AE(12) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/16/79
2000
1500
1000
500
0
AE(12) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
9
12
16
20
24
UNIVERSAL TIME(HRS)


12/17/79
AE(12) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

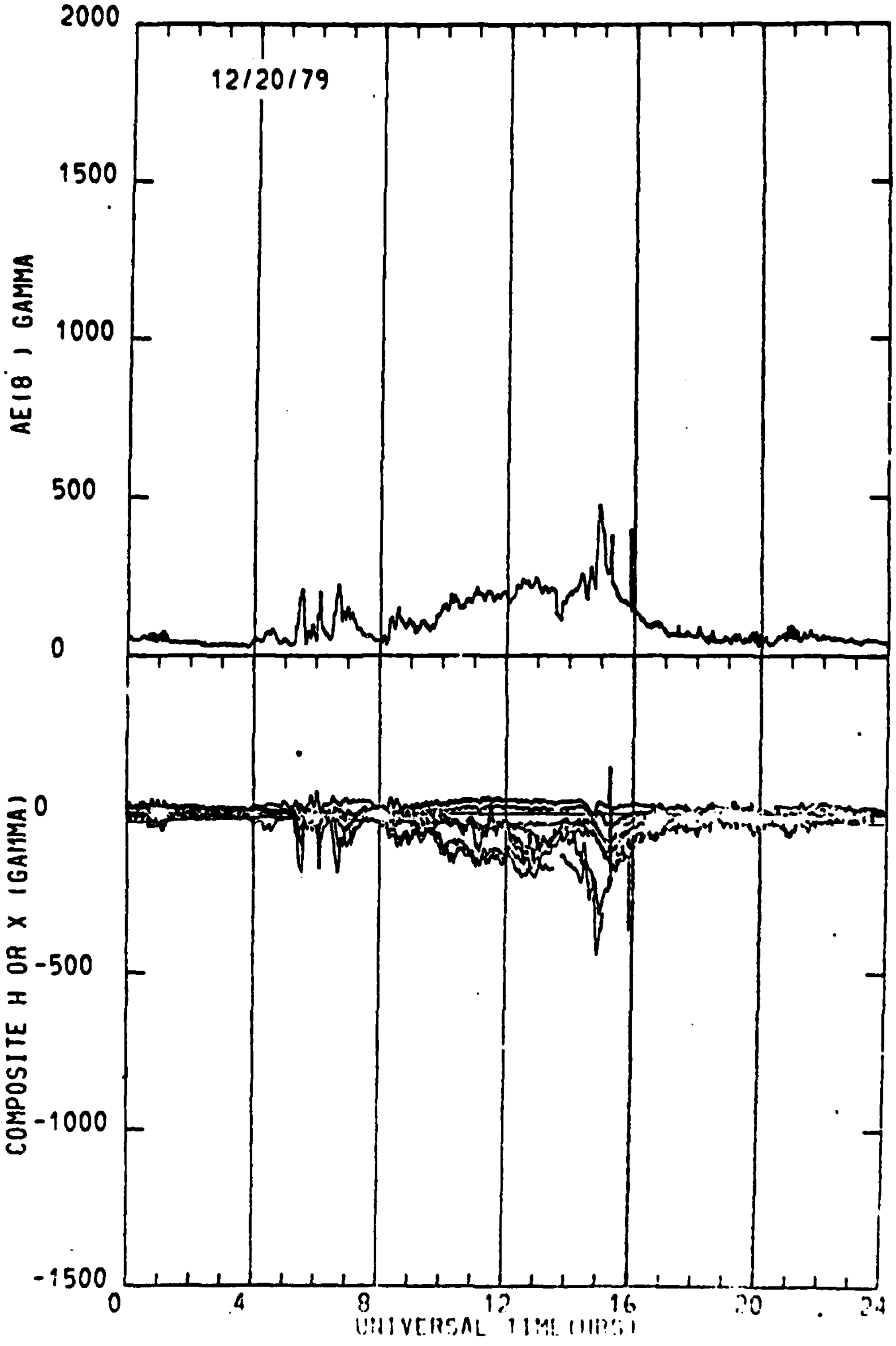

12/18/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

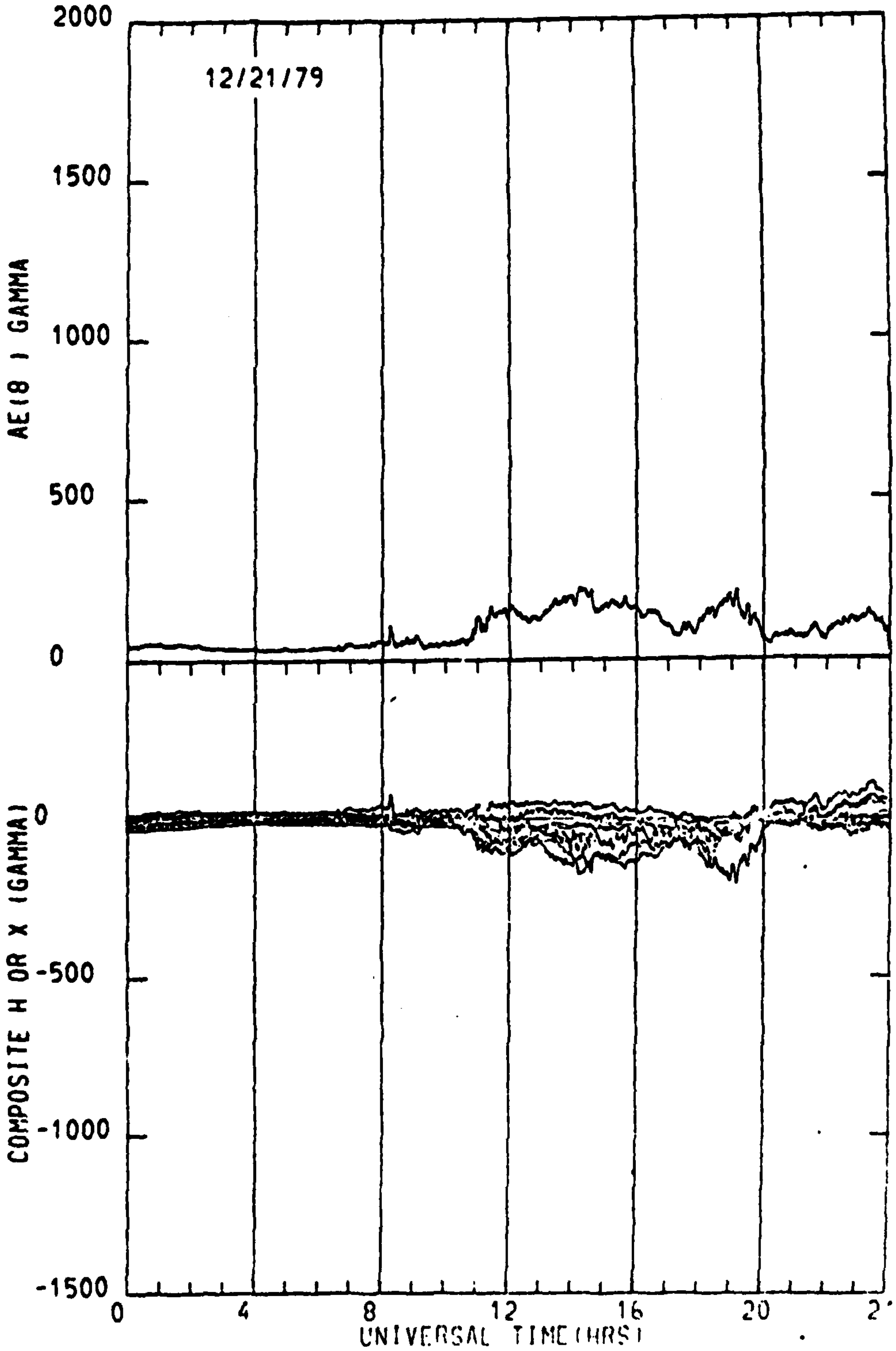

12/19/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

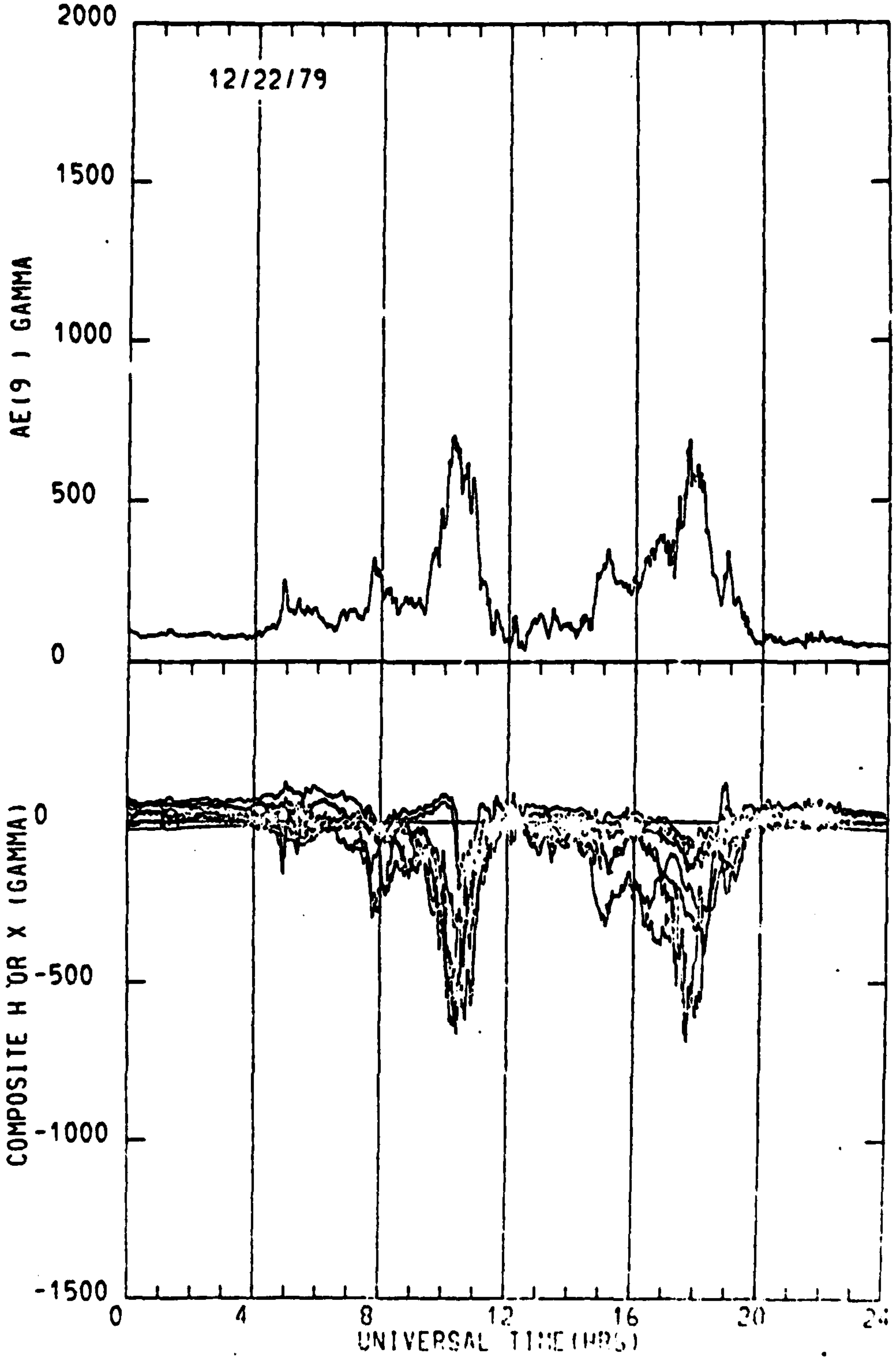
AD-A104 109 JOHNS HOPKINS UNIV LAUREL MD APPLIED PHYSICS LAB F/G 8/14
MAGNETOSPHERIC AND GEOMAGNETIC ACTIVITY DURING THE FIRST YEAR (--ETC(U)
DEC 80 C MENG MIPR-FY71218000009
UNCLASSIFIED AFGL-TR-81-0104 NL

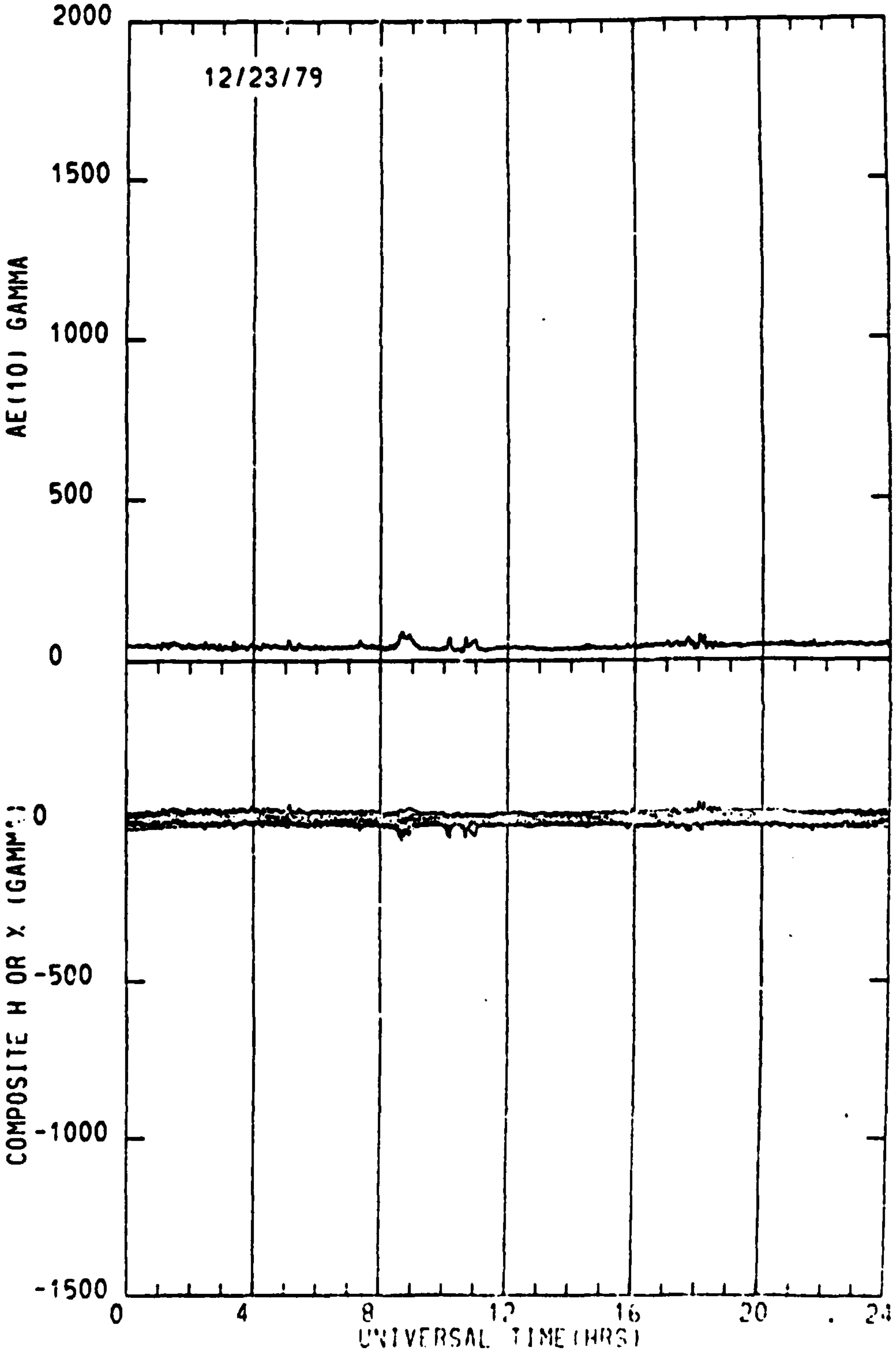
5 of 5
AD
A104109

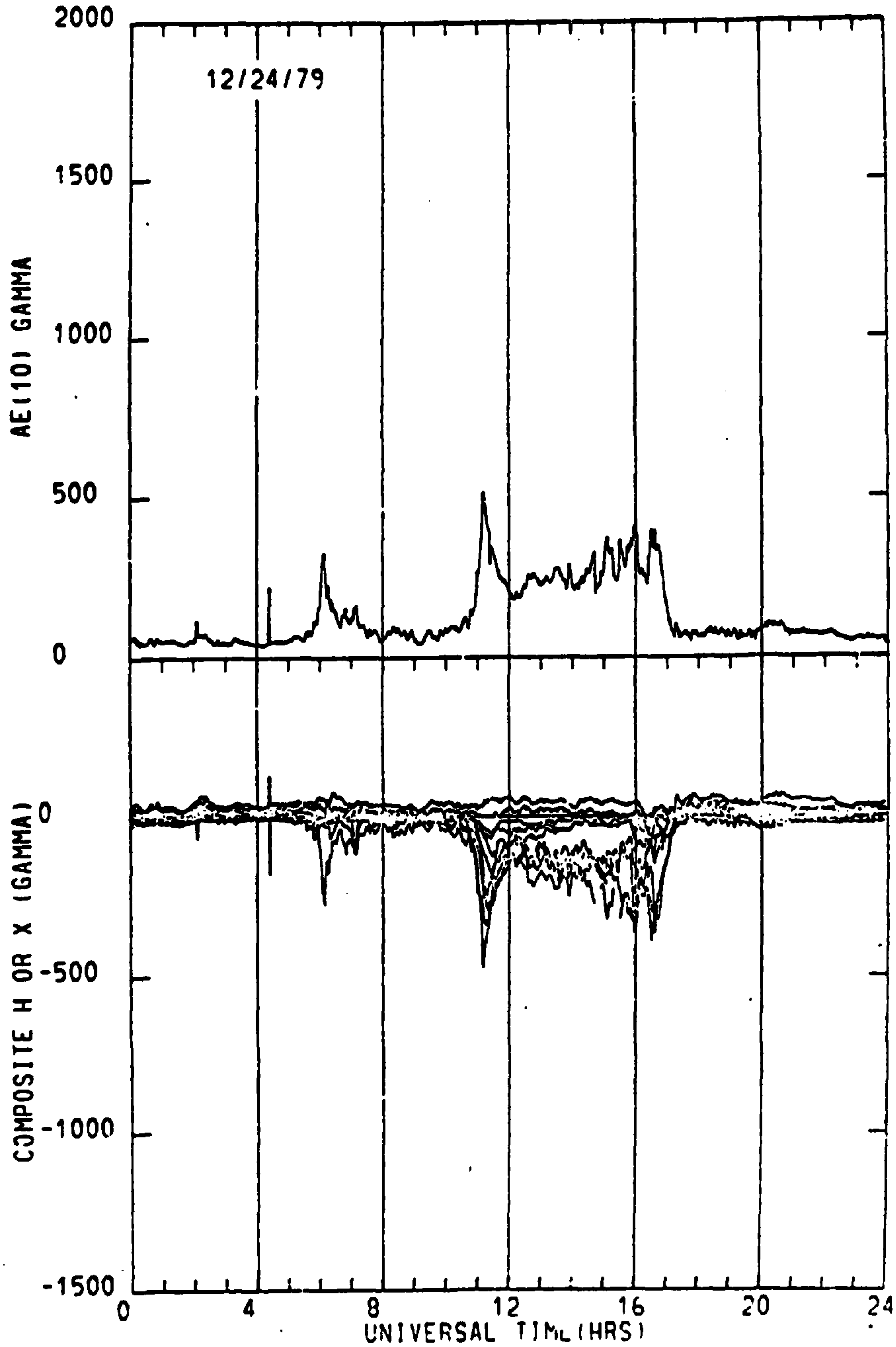
END
DATE
FILMED
10-81
DTIC

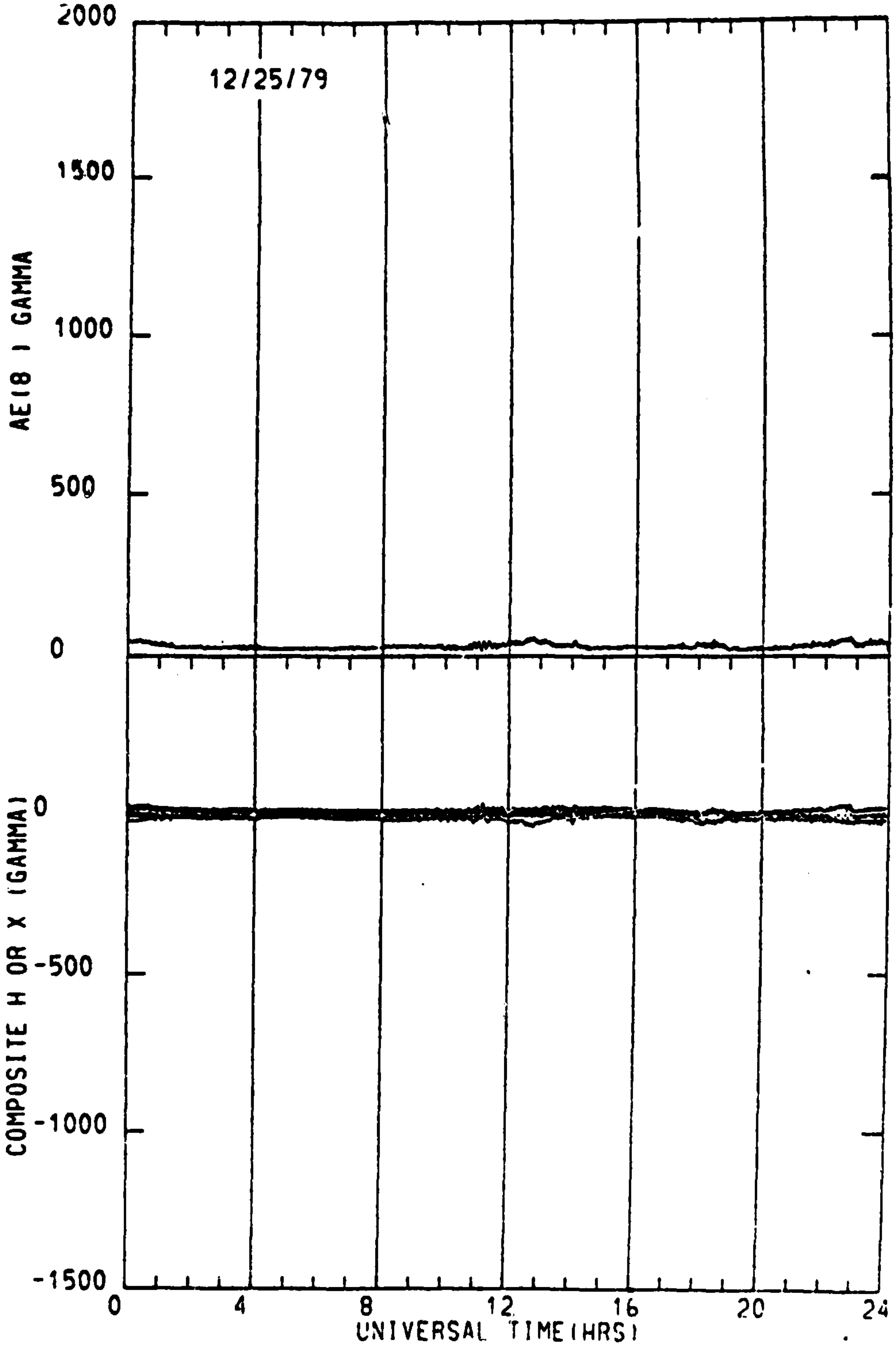

12/20/79
2000
1500
1000
500
0
AE(8) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

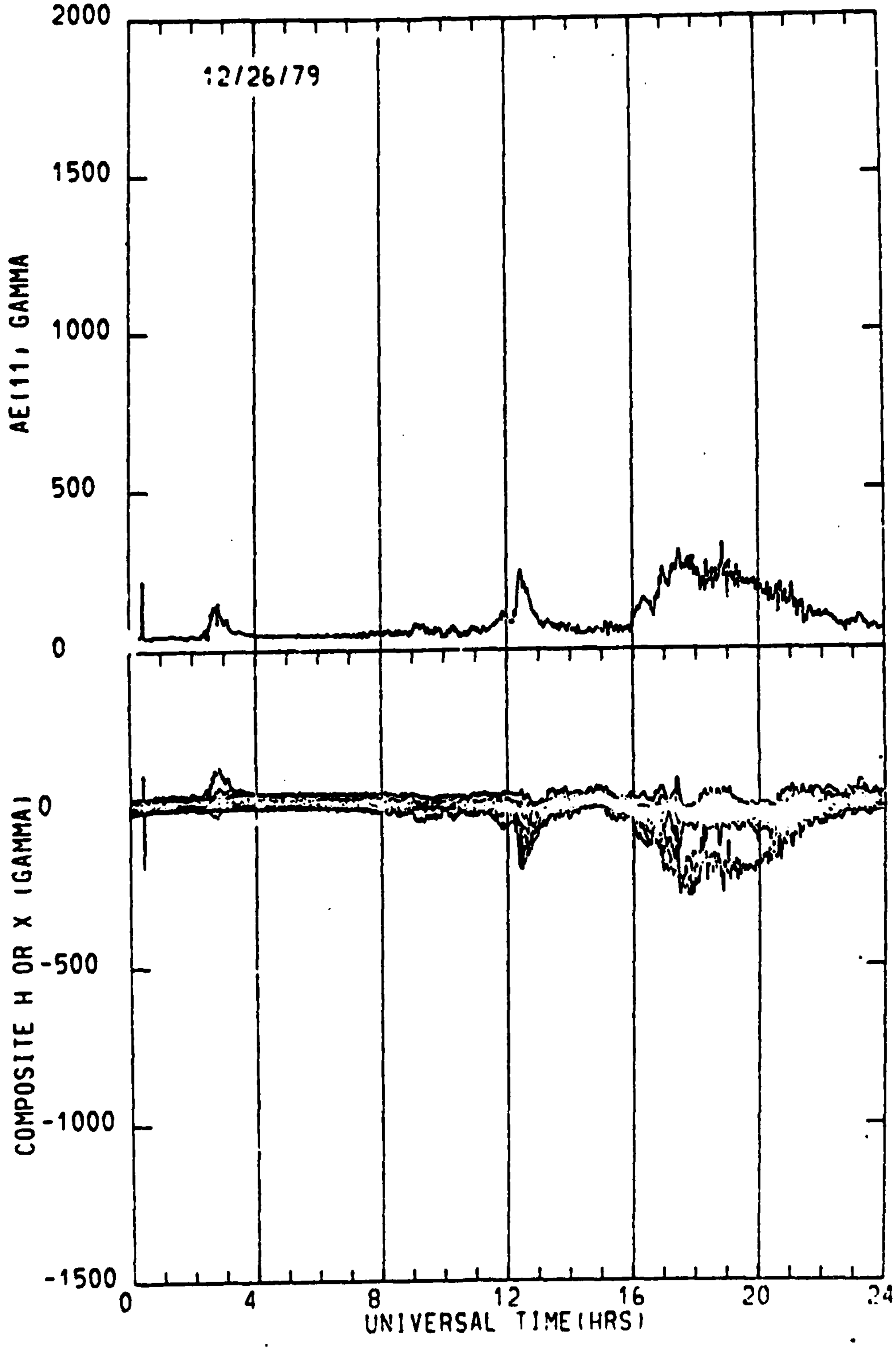

12/21/79
2000
1500
1000
500
0
AE(8) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
UNIVERSAL TIME(HRS)

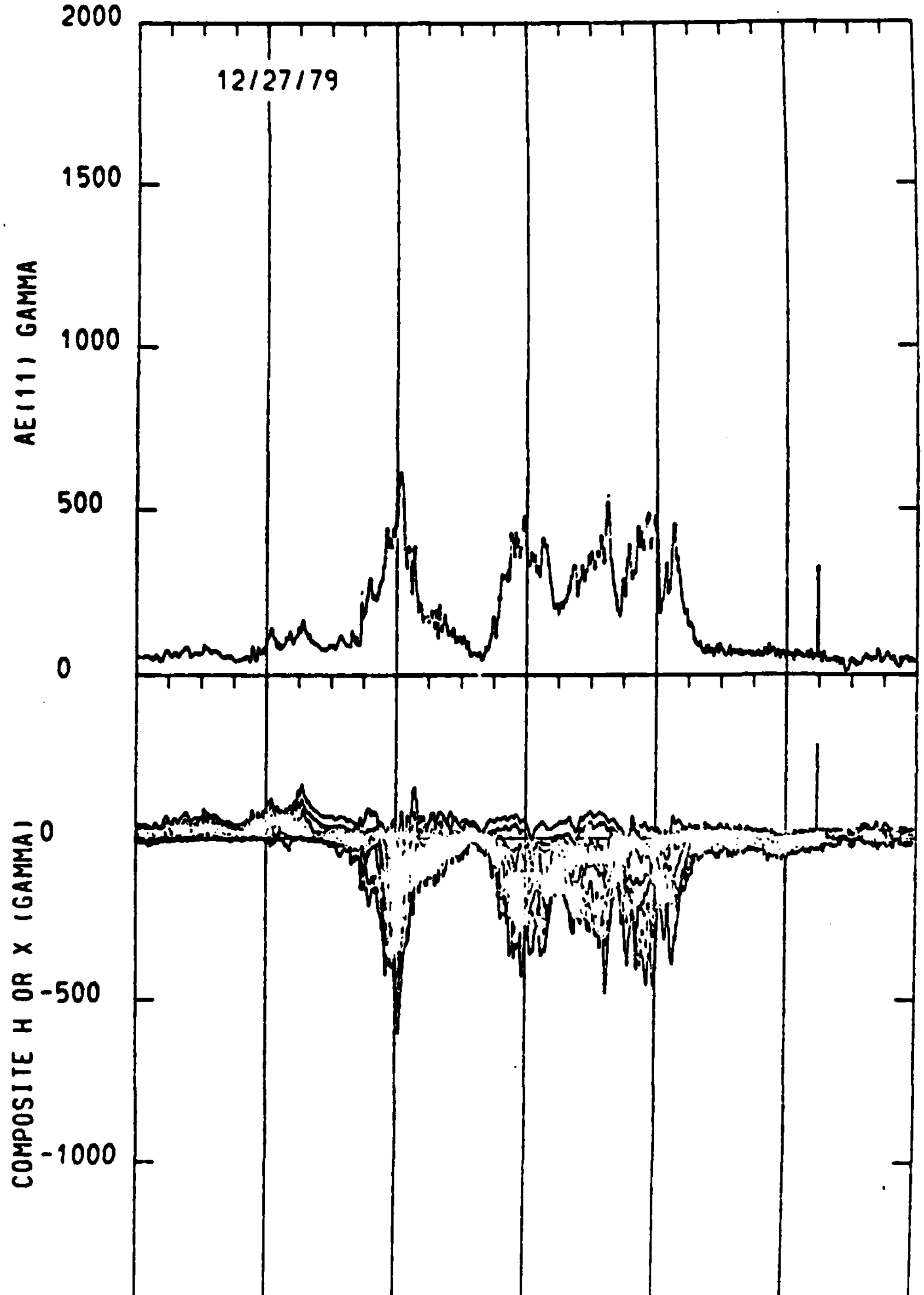

12/22/79
2000
1500
1000
500
0
AE(9) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

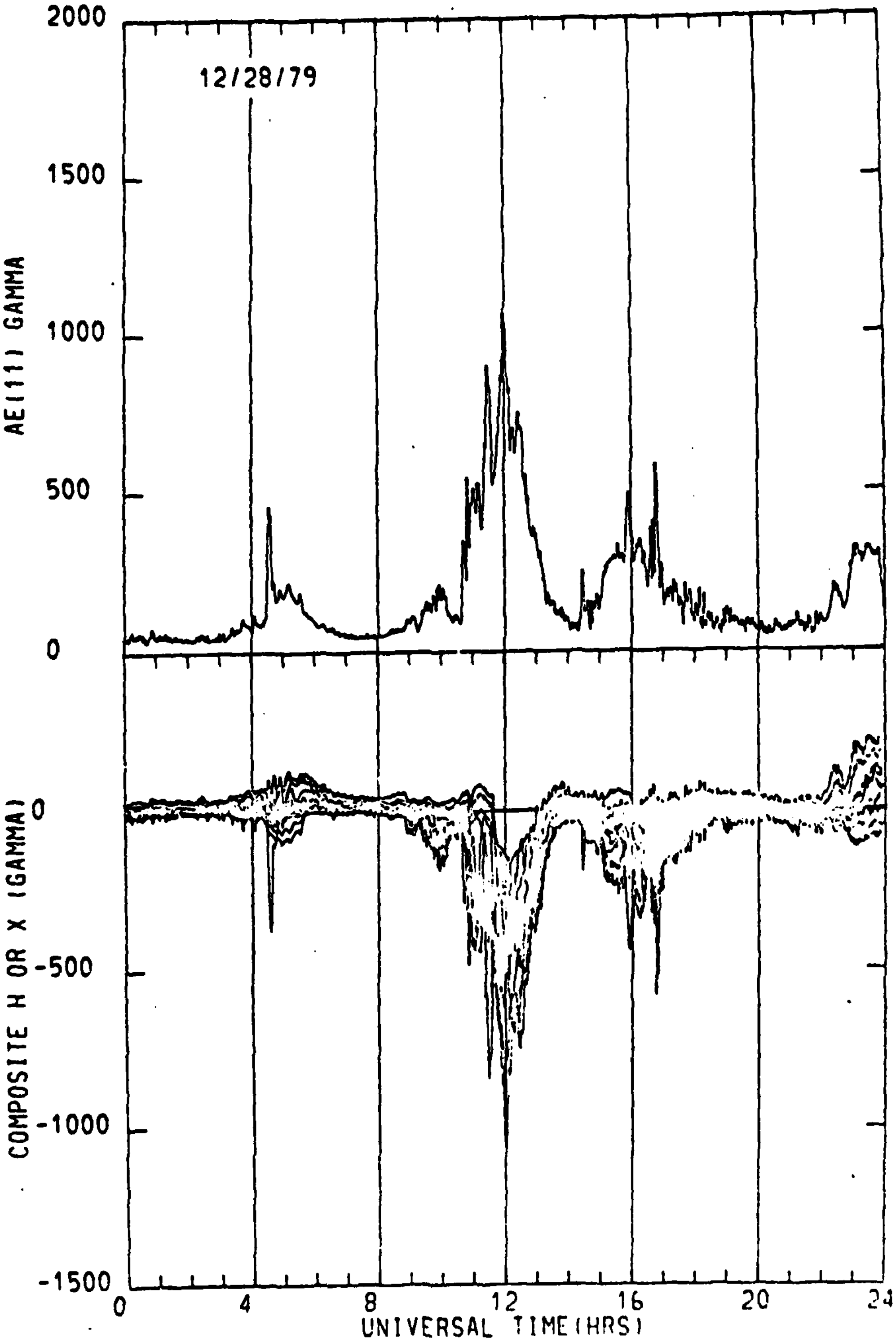

12/23/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

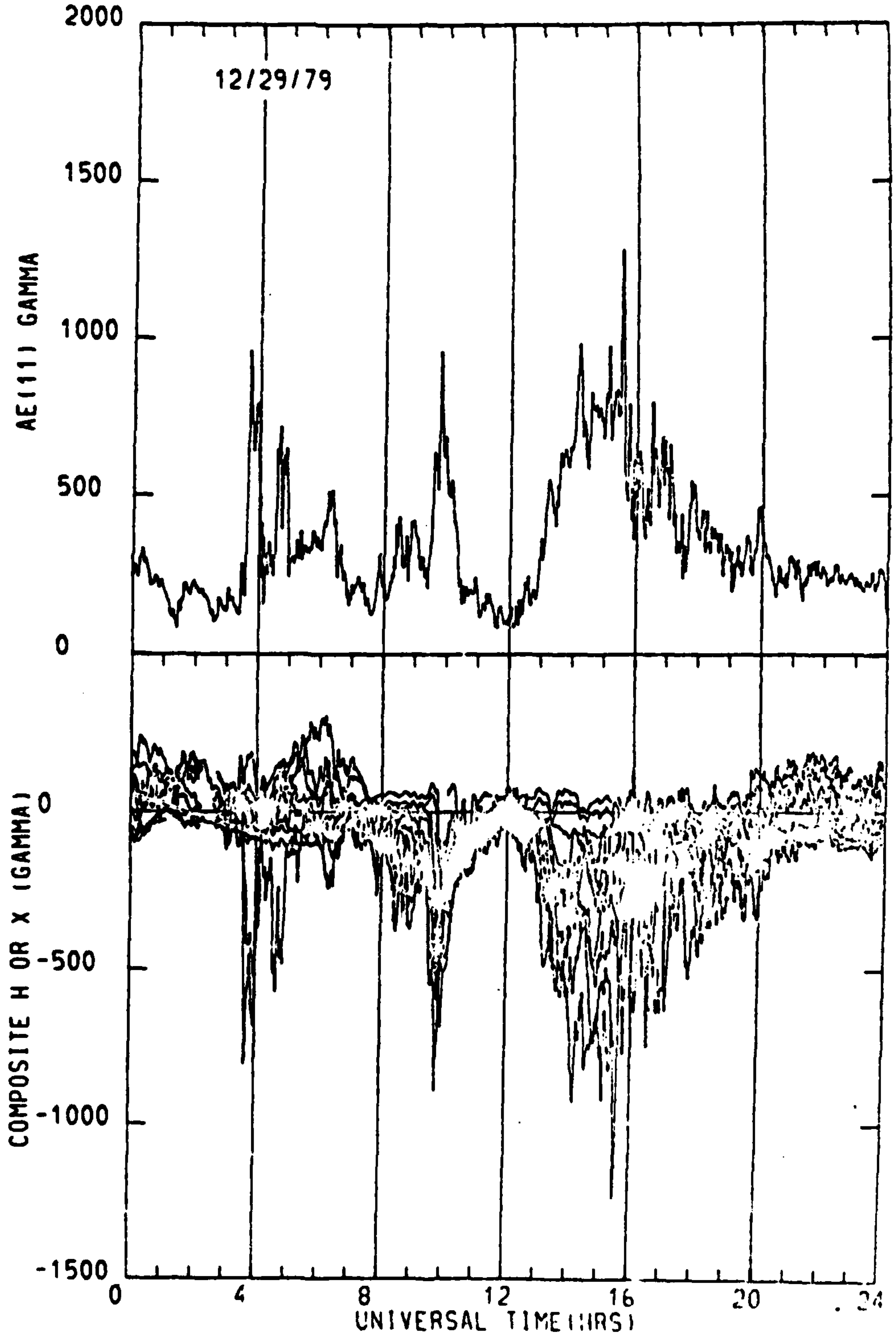

12/24/79
2000
1500
1000
500
0
AE(10) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME (HRS)

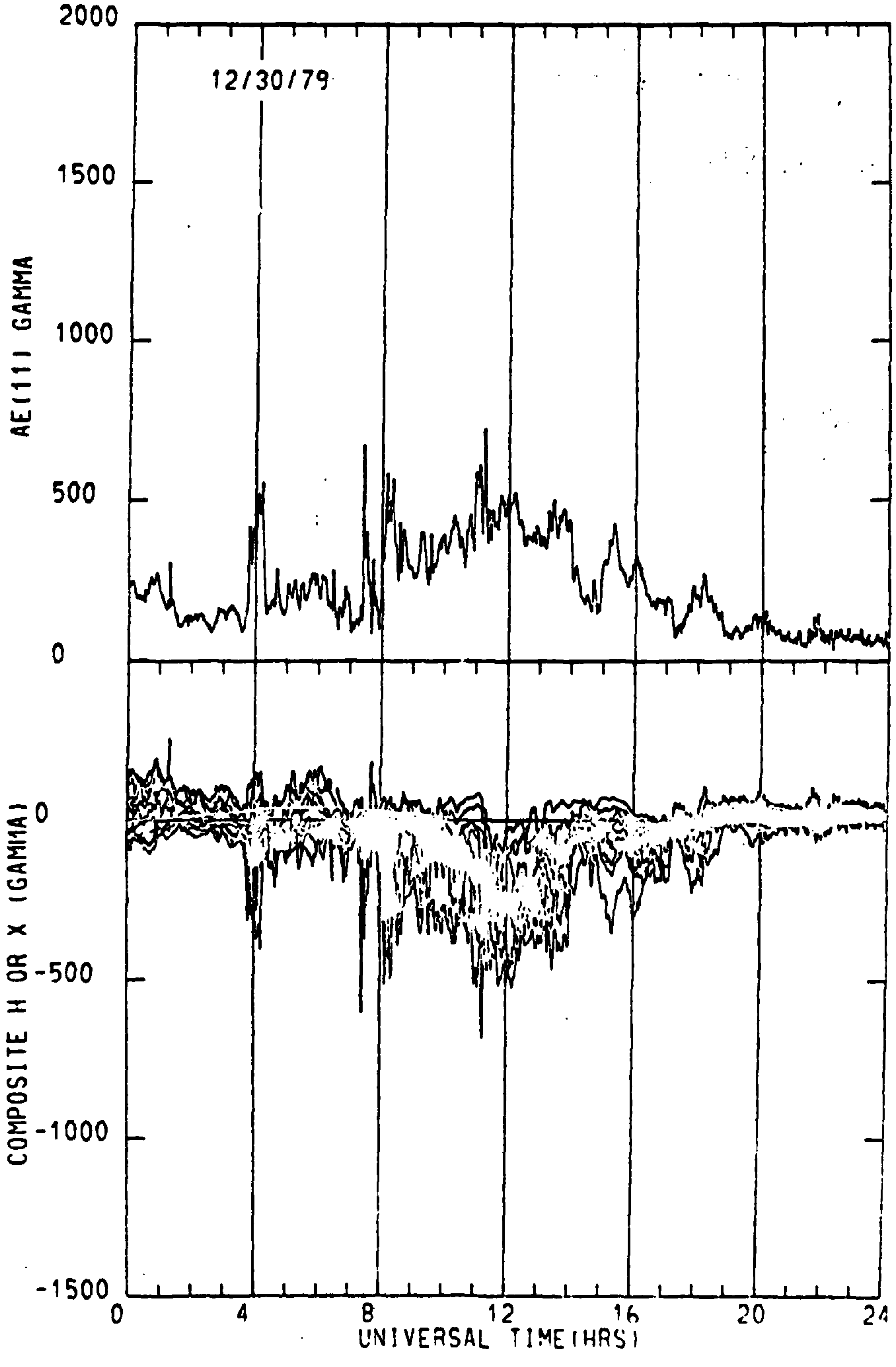

12/25/79
2000
1500
1000
500
0
AE(8) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/26/79
2000
1500
1000
500
0
AE(11), GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

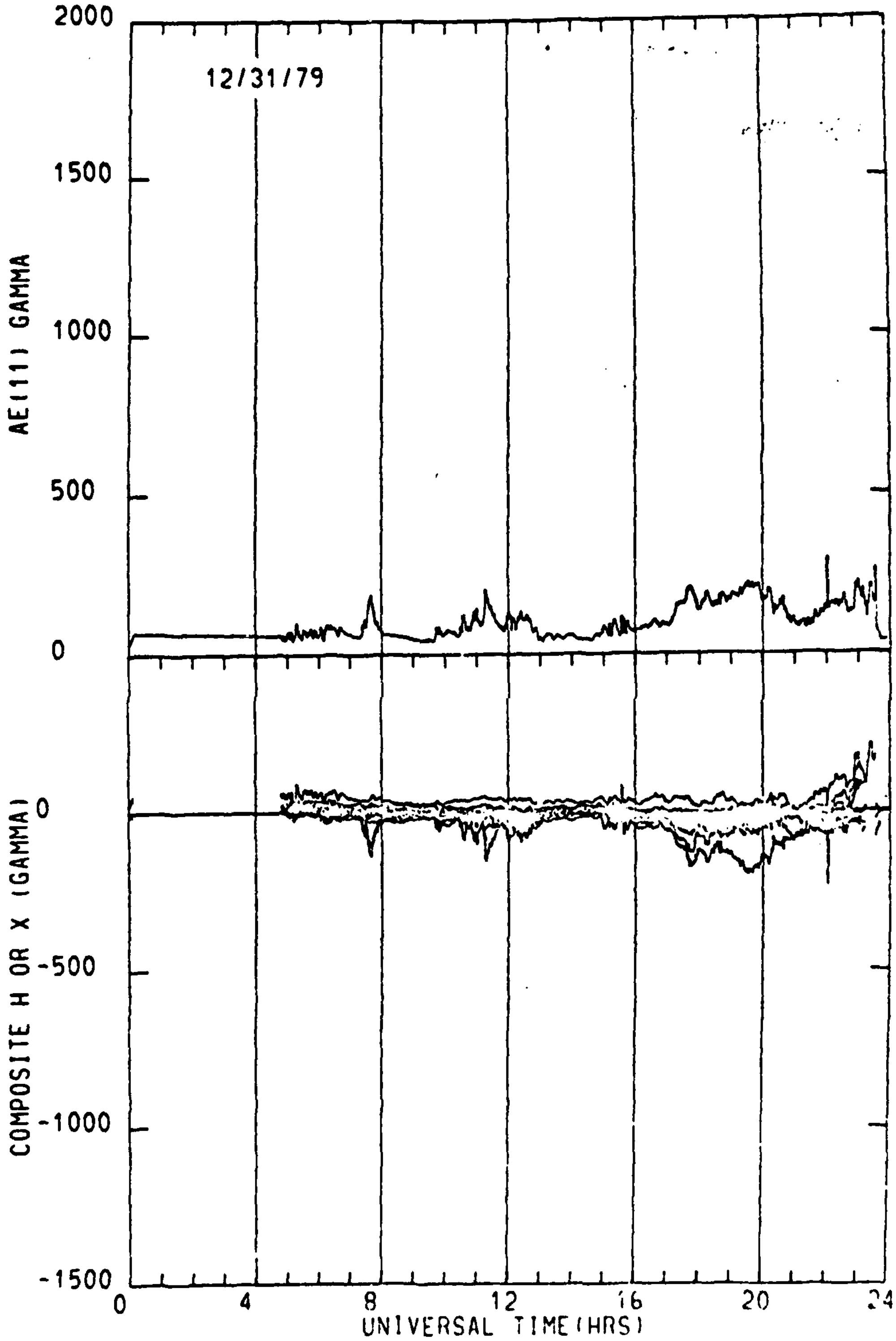

12/27/79
2000
1500
1000
500
0
AE(11) GAMMA
0
-500
-1000
-1500
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/28/79
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
2000
1500
1000
500
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/29/79
AE(11) GAMMA
2000
1500
1000
500
0
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)



12/30/79
2000
1500
1000
500
0
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
0
-500
-1000
-1500
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)


12/31/79
2000
1500
1000
500
0
-500
-1000
-1500
AE(11) GAMMA
COMPOSITE H OR X (GAMMA)
0
4
8
12
16
20
24
UNIVERSAL TIME(HRS)

APPENDIX 3

TABLES OF 1.0 MIN. AE INDICES

(Deleted in this Report due to the page limitation;
The listing can be obtained from AFGL or APL/JHU)

END

DATE

FILMED

10-81

DTIC